

OPNAVINST 8000.16A

**THE NAVAL ORDNANCE MAINTENANCE
MANAGEMENT PROGRAM (NOMMP)**

VOLUME I

**CONCEPTS, OBJECTIVES, POLICIES,
ORGANIZATIONS,
AND
RESPONSIBILITIES**



**DEPARTMENT OF THE NAVY
OFFICE OF THE CHIEF OF NAVAL OPERATIONS
WASHINGTON D.C.**

1 JUNE 2001

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CHAPTER 1.1

Introduction and Guide for Using the Naval Ordnance Maintenance Management Program Instruction

1.1.1 Introduction. The Naval Ordnance Maintenance Management Program (NOMMP) manual, as the major implementing directive for the Naval Ordnance Maintenance Management Program, issues the policies, procedures, and responsibilities for activities supporting or performing ordnance maintenance. Because of the dynamic nature of the program, the NOMMP manual has been and shall continue to be developed and refined to incorporate the changes brought about by advances in technology and improved management and maintenance of these changes.

1.1.2 How to Obtain Copies.

1.1.2.1 Automatic Distribution. To receive revisions and changes to this instruction automatically, a unit must be established on the automatic distribution list maintained by the Naval Air Warfare Center Weapons Division (NAVAIRWARCENWPNDIV) for the Chief of Naval Operations (CNO). To become established on the list or to change distribution requirements, submit a letter, with justification, to Commander, Naval Air Warfare Center Weapons Division, (Code-361100E), 575 I Avenue Suite 1, Point Mugu, Ca. 93042-5049.

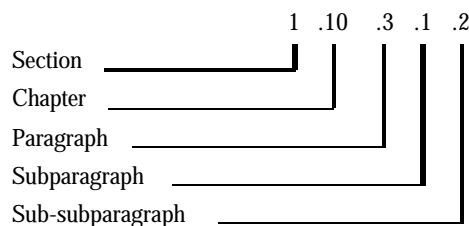
1.1.2.2 Additional Copies. Send a letter, with justification, to NAVAIRWARCENWPNDIV (Code-361100E) for additional copies.

1.1.2.3 Internal Control and Distribution. Within Navy and Marine Corps aviation activities, the internal control and distribution of this instruction is the responsibility of the weapons officer.

1.1.3 Guide for Using the NOMMP

1.1.3.1 The NOMMP manual is divided into volumes, sections, and chapters. A volume contains multiple sections. A section contains several related chapters and a chapter contains major and subordinate paragraphs organized to facilitate the sequential presentation of information for clarity and ease of understanding.

1.1.3.2 Each paragraph is numbered with a unique decimal system. The first digit identifies the section; the second and subsequent decimals, the chapter, paragraph, subparagraph, and sub-subparagraph.



1.1.3.3 When looking for a specific item of information, use the table of contents provided for each chapter which lists the paragraphs, subjects, and page numbers of material within that chapter.

1.1.3.4 The pages are numbered in a separate series for each volume, section, chapter, appendix and index. The pages of each chapter are numbered in sequence and are preceded by the section and chapter number, e.g., the third page in section 2, chapter 4 is numbered 2-4-3. The volume number is located at the top of each page. Each appendix page is designated with a letter which identifies the appendix followed by sequential number, e.g., A-1, B-7, etc. An index is provided in the back of volume IV.

1.1.3.5 Illustrations are provided to clarify or amplify the text, and are located near the text to which they apply. They are numbered sequentially within each chapter and are preceded by the section and chapter number, e.g., the first figure in section 6, chapter 2 is numbered 6-2-1.

1.1.4 Procedures for Recommending and Submitting Changes and Corrections to, or Requesting Deviations from, the NOMMP. All changes to this instruction are approved or disapproved by CNO (N781) after they have been reviewed and evaluated by the NOMMP Policy Committee. (Changes to appendices are exempt from Policy Committee review.) NAVAIRWARCENWPNDIV is responsible for coordinating and managing these changes.

1.1.5 Definitions

1.1.5.1 Interim Change. A change issued by CNO message to correct a procedure, policy, practice, or situation adversely affecting maintenance, aircraft and personnel safety, readiness, or a critical function in the NOMMP.

1.1.5.2 Change. A modification to the existing policies or procedures of the NOMMP are indicated by revision bars to the left of the changed text.

1.1.5.3 Correction. A modification in punctuation, grammar, capitalization, spelling, syntax, or tense; and typographical errors, word omissions, or ambiguities not affecting policies or procedures.

1.1.5.4 Deviation. A departure from policies, procedures, or responsibilities in the NOMMP. Deviations are granted by CNO for a specific duration for a situation or set of circumstances not requiring a revision, addition, or deletion to the NOMMP.

1.1.6 Submission of Recommendations or Requests

1.1.6.1 Interim Changes. Any individual or activity having knowledge of any situation, procedure, or policy that adversely affects critical functions in the NOMMP shall report the information by naval message to the NAVAIRWARCENWPNDIV (Code-361100E) with an information copy to CNO (N781C8) and the chain of command.

1.1.6.2 Corrections. Recommendations to correct administrative discrepancies shall be submitted by naval letter directly to Commander, Naval Air Warfare Center Weapons Division, 575 I Avenue Suite 1, Point Mugu, CA 93042-5049, Attention (Code-361100E), with a copy to CNO (N781C8). Figure 1-1-1 is a sample correction recommendation letter.

1.1.6.3 Changes. Recommendations to policies or procedures in the NOMMP shall be submitted by naval letter to NAVAIRWARCENWPNDIV (Code-361100E). Figure 1-1-2 is a sample change recommendation letter.

1.1.6.4 Deviations. Requests to deviate from the NOMMP shall be submitted by naval letter to CNO (N781C8) with a copy to NAVAIRWARCENWPNDIV (Code-361100E). Figure 1-1-3 is a sample deviation request letter.

submitter any means is acceptable. The preferred method is: Change Process request using the CNO Red Shirt Web Page. URL "http://143.113.200.54/redshirt/shirt1.htm".

1.1.6.5 Technical Update. A modernization of administrative, organizational or technical information not affecting existing policies or procedures of the NOMMP. Recommendations to update or include additional commodities, ordnance technical data, organizational structures, functions or responsibilities shall be submitted by naval letter, as a change recommendation, to NAVAIRWARCENWPNDIV (Code-361100E) with a copy to CNO (N781C8). paragraph 1.1.6.3 applies.

1.1.7 Processing of Recommendations or Requests

1.1.7.1 Interim Changes. NAVAIRWARCENWPNDIV, upon receipt of a report identifying a situation, procedure, or policy that adversely impacts a critical function in the NOMMP, perform research and liaison as required to verify or substantiate the report and develop, if warranted, an interim change for release by CNO.

1.1.7.2 Changes

1.1.7.2.1 Upon receipt of a change recommendation, NAVAIRWARCENWPNDIV (Code-361100E) will review it, conducting liaison as necessary with affected organizations. Change recommendations accepted for processing are then assigned a NOMMP control number.

1.1.7.2.2 NAVAIRWARCENWPNDIV (Code-361100E) will acknowledge receipt of all change recommendations to the originator.

1.1.7.2.3 Upon completion of the review, NAVAIRWARCENWPNDIV (Code-361100E) will either:

a. Return the change recommendation to the submitting activity for additional information, clarification, or cancellation, as applicable; or,

b. Forward the change recommendation, including any comments, modifications, or recommendations developed during the review process, to the NOMMP Working Committee and other activities as appropriate for review and comments.

1.1.7.2.4 Upon receipt of comments from the NOMMP Working Committee or other cognizant activities, NAVAIRWARCENWPNDIV shall prepare and submit a consolidated change proposal to CNO (N781C8) with recommendations as appropriate.

NOTE

The method of submitting Recommendations of Change is at the discretion of the

DEPARTMENT OF THE NAVY
NAVAL AIR FACILITY
MAYPORT, FL 32228

IN REPLY REFER TO
8000.16A
Ser 11/222
1 MAY 01

From: Commanding Officer, Naval Air Facility, Mayport
To: Commander, Naval Air Warfare Center Weapons Division, Point Mugu (Code-361100E)

Subj: CORRECTION RECOMMENDATION TO OPNAVINST 8000.16A

Ref: (a) OPNAVINST 8000.16A

1. Recommend correction to reference (a) as follows:
 - a. On page 1-1-3, paragraph 1.1.3.2, change THUMPERBIRD to THUNDERBIRD.
 - b. After making the change, the correct spelling of the missile will be reflected.
2. Our point of contact is Ens J. Jones, DSN 999-1111.

A. B. SEA
By direction

Copy to:
CNO (N781C8)

Figure 1-1-1. Sample Correction Recommendation Letter

DEPARTMENT OF THE NAVY
NAVAL AIR WARFARE CENTER WEAPONS DIVISION
CHINA LAKE CA. 32228

IN REPLY REFER TO
8000.16A
Ser 22/3 33
1 MAY 01

From: Commander, Naval Air Warfare Center Weapons Division, China Lake
To: Commander, Naval Air Warfare Center Weapons Division, Point Mugu (Code-361100E)

Subj: CHANGE RECOMMENDATION TO OPNAVINST 8000.16A

Ref: (a) OPNAVINST 8000.16A

1. Recommend change to reference (a) to add MUSTANG air-to-ground missile to OPNAVINST 8000.16A
2. Our point of contact is Mr. S. Smith, DSN 666-1111.

B. C. DEE
By direction

Copy to:
CNO (N781C8)

Figure 1-1-1. Sample Change Recommendation Letter

DEPARTMENT OF THE NAVY
NAVAL WEAPONS STATION
YORKTOWN, VA. 32228

IN REPLY REFER TO
8000.16A
Ser 33/444
1 MAY 01

From: Commanding Officer, Naval Weapons Station, Yorktown
To: Chief of Naval Operations (N781C8)

Subj: DEVIATION FROM OPNAVINST 8000.16A

Ref: (a) OPNAVINST 8000.16A

1. Figure 1-4-124 of Volume II to reference (a) shows a retest after remating of sections for HELLFIRE missile intermediate maintenance processing.
2. Processing requirement projections for the forthcoming loadout of the USS INCHON (LPH-12) indicate a workload which will preclude retest after remating.
3. Please grant this activity a deviation from the reference (a) requirement to retest HELLFIRE missiles after remate be granted this activity to apply only for missiles undergoing intermediate maintenance testing for loadout on the USS INCHON prior to its forthcoming deployment.
4. Our point of contact is LCDR J. Johnson, DSN 888-1111.

T. U. Victor
By direction

Copy to:
NAVAIRWARCENWPNDIV (Code-361100E)

Figure 1-1-2. Sample Deviation Request Letter

1.1.7.2.5 Upon receipt of a consolidated change proposal, CNO (N781) shall evaluate and approve or disapprove it or, if required, refer the change proposal to the NOMMP Working Committee for further review.

1.1.7.2.6 Upon final approval by CNO (N781), the change recommendation is returned to NAVAIRWARCENWPNDIV (Code-361100E) for inclusion in a NOMMP change package.

1.1.7.2.7 Printing and distribution of change packages shall be coordinated by NAVAIRWARCENWPNDIV (Code-361100E) with CNO and the SECNAV/OPNAV Directives Control Office.

1.1.7.3 Corrections. NAVAIRWARCENWPNDIV (Code-361100E), upon receipt of correspondence identifying a correction, will send a reply to the originator acknowledging receipt and status. Upon validation of the recommended correction, NAVAIRWARCENWPNDIV will incorporate it into a NOMMP change package.

1.1.7.4 Deviations. CNO, assisted by NAVAIRWARCENWPNDIV (Code-361100E), will research and provide liaison as needed to verify or substantiate the need for requested deviations. Following this investigation, CNO will approve or disapprove the deviation request.

1.1.7.5 Technical Updates. Upon completion of the review, paragraph 1.1.7.2.1, NOMMP recommendations categorized as technical updates will be assigned a unique NOMMP control number.

1.1.7.5.1 NAVAIRWARCENWPNDIV (Code-361100E) will develop the technical update and forward it to selected working committee members (CNO and NAVAIRSYS-COM), the applicable NAWCWPNS commodity manager, advisory command member and other activities as appropriate for review and comment. Paragraphs 1.1.7.2.2, 1.1.7.2.4, 1.1.7.2.5 and 1.1.7.2.6 apply.

CHAPTER 1.2

Introduction, Objective, Policy, and Responsibility for the Naval Ordnance Maintenance Management Program

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CHAPTER 1.2

Introduction, Objective, Policy, and Responsibility for the Naval Ordnance Maintenance Management Program

1.2.1 Introduction. The Naval Ordnance Maintenance Management Program (NOMMP) is sponsored and directed by the Chief of Naval Operations (CNO) and coordinated by the Naval Air Systems Command (NAVAIRSYSCOM). This chapter addresses CNO concepts, objectives, policies, programs, organizations, and responsibilities.

1.2.2 Objective

1.2.2.1 The objective of the NOMMP is to achieve and continually improve aviation material readiness and safety standards established by the CNO with optimum use of manpower, material, and funds. CNO's material readiness standards include the maintenance and repair of ordnance, material, and equipment at that level of maintenance which will ensure optimum economic use of resources; the application of a systematic planned maintenance program; and the collection, analysis, and use of pertinent data in order to effectively improve material condition and safety.

1.2.2.2 The methodology for achieving the spirit and intent of the NOMMP objective is labeled "performance improvement." Performance improvement is an "all-hands" effort which focuses on service and close support to customers. As a primary prerequisite, the mission must be clearly understood and communicated to everyone in the organization. It is essential all personnel know their job, understand their contribution to mission accomplishment, and be sensitive to customer requirements. New or improved cost-effective capabilities and processes must be continuously pursued. Mutually supporting teamwork, constant communication, and compatible measures are critical elements for success. Performance improvement must be targeted to accomplish the following broad goals:

- a. Increased readiness.
- b. Improved quality.
- c. Improved deployability.
- d. Improved sustainability.
- e. Reduced costs.

- f. Enhanced preparedness for mobilization, deployability, and contingency operations.

- g. Enhanced supply availability.

- h. Improved morale and retention.

1.2.2.3 Performance Improvement. While the overall performance of our units has been excellent, significant improvements are still possible and necessary. To realize continuous gains, performance improvement must be fully understood and actively managed. As new techniques and concepts evolve, they must be evaluated and then implemented. Before performance improvement efforts can be successfully managed, all performance elements must be defined.

1.2.2.4 Performance Elements. The seven performance elements are defined as follows:

1.2.2.4.1 Productivity. Productivity is the pivotal and an integral part of the seven performance elements in that it is highly interrelated with all other elements. Productivity must always be viewed in terms of how it impacts effectiveness, efficiency, quality, innovation, quality of work life, and budget. Productivity relates the outputs created by a system to the inputs required to create those outputs as well as the transformation process of inputs to outputs. Inputs in the form of people, personnel, skills, material, ready-for-issue and not ready-for-issue components, bit or piece parts, equipment, support equipment, hand tools, methods, technical publications, directives, data, environment, facilities, funding, and energy are brought into the system. These inputs are transformed into outputs (mission-capable or full mission-capable aircraft, ready-for-issue components, manufactured goods, and inspection and calibration services) which are vital in providing necessary maintenance and logistic support to achieve and sustain naval aviation readiness.

1.2.2.4.2 Effectiveness. Effectiveness as a function of the outputs, tells us how well goals are achieved. For example, in Intermediate Maintenance Activities (IMAs), effectiveness is demonstrated by how well we repair the right things at the right time to ensure that maximum readiness is achieved.

In squadrons, it is how well assigned aircraft can perform their mission.

1.2.2.4.3 Efficiency. Efficiency is the relationship between actual and planned resources. It tells how well the resources were used, as in manpower utilization.

1.2.2.4.4 Quality. Quality is the degree of satisfaction in a product or service as determined by the customer. Fit, form, function, reliability, maintainability, consistency, and uniformity are some characteristics that are affected by quality.

1.2.2.4.5 Innovation. Innovation is the creativity applied to the transformation process; for example, development of new repair processes.

1.2.2.4.6 Quality of Work Life. Quality of work life is a function of morale and other factors which affect personnel pride and motivation.

1.2.2.4.7 Budgetability. Budgetability is the ability to perform the assigned mission within allotted resources.

1.2.2.5 Naval aviation is "big business." Squadrons fly aircraft in excess of 1.7 million hours annually. To help support that task, aviation intermediate maintenance activities process approximately 1.5 million repairable items annually. Due to the magnitude of these numbers, relatively small performance improvements have a substantial impact on reducing costs and keeping naval aviation affordable. Consequently, the implementation of performance improvement must receive attention and support at all echelon.

1.2.2.6 CNO Strategy for Performance Improvement

1.2.2.6.1 The following specific performance improvement objectives in the CNO strategic plan provide direction to all echelons. To effectively achieve these objectives, an attitude of commitment, a sense of urgency, and a basis for action must prevail. These specific objectives are:

a. Seek to improve the professionalism of maintenance managers, acquisition managers, and logisticians through development of an aviation maintenance manager's career training program.

b. Develop comprehensive measures of performance improvement and provide appropriate analytical tools.

c. Create constancy of purpose towards improving performance and allocating resources to provide for long-range requirements.

d. Define and implement individual activity, aircraft controlling custodian (ACC) and type commander (TY-COM) strategic plans. Use statistical methods to identify problems in the system whose correction can improve performance.

e. Continue to support the implementation of the naval aviation logistics command management information system.

f. Adopt a new philosophy for performance improvement. Any substantial improvement is the responsibility of management and must come from the system.

g. Continue performance improvement conferences, both at the ACC, TYCOM and individual activity level.

h. Work towards achieving and maintaining a stable work force.

i. Ensure performance improvements focus on and suit contingency mobilization requirements.

j. Understand the financial impact of repair action decisions. Identify components for which new or expanded repair capabilities would be cost effective. Emphasis should remain on the repair of mission essential items.

k. Require acquisition managers to focus on design criteria for reliability and maintainability, maintenance concepts, transportability, utilization of diagnostics, and maintenance training.

l. Sustain the effort to ensure comprehensive review and funding support to provide repair parts.

m. Identify the best practices and procedures of individual activities and implement them at other activities when feasible and cost effective through analysis of performance among Intermediate Maintenance Activities (IMAs) and squadrons.

n. Identify, evaluate, and report on the impact of current directives, programs, and practices which impede the objectives of performance improvement.

o. Improve technical training to ensure "state of the art" level of training.

p. Focus supervision on helping our people do a better job.

q. Insist that naval aviation suppliers demonstrate evidence of statistical control of quality. Insist that naval aviation contracts are awarded on life cycle cost basis, not on initial price tag alone.

1.2.2.6.2 The Naval Aviation Maintenance Program Policy Committee is the Naval Aviation Fleet Performance Improvement Executive Steering Committee. This committee meets semiannually to review and resolve issues involving naval aviation performance improvement matters, revise or add long range goals and objectives, and provide direction for implementation. Performance improvement management guidance, initiatives implemented, results achieved, and new or revised objectives are issued at the conclusion of each Executive Steering Committee meeting.

1.2.2.6.3 The Commander Naval Air Systems Command Code AIR-3.6.1 is the focal point for fleet aviation maintenance performance improvement matters. New techniques and concepts evolve periodically which require review for potential implementation. To assist in this endeavor, the Naval Aviation Maintenance Office is responsible to:

- a. Pursue new performance improvement methods and maintain currency in performance management techniques.
- b. Provide technical assistance for performance improvement efforts at ACC or TYCOM and fleet activities.
- c. Assist with the transfer of performance improvement ideas among all activities.
- d. Generate awareness for performance improvement.
- e. Track action items assigned by the Executive Steering Committee.

1.2.2.7 To ensure war fighting capability and deployability while enhancing fleet readiness, sustainability, and preparedness for mobilization, naval aviation maintenance activities must build on the excellence they have already achieved and continue to improve their performance. Performance improvement initiatives at every level contribute toward accomplishing these goals while reducing cost. Every individual must be encouraged to participate and provide their best efforts. The challenge of maintaining fleet readiness while keeping naval aviation affordable is paramount.

1.2.3 Funding. CNO annually allocates materials and services for support of the NOMMP. Allocations are based upon competing requirements for the resources available in the Six Year Defense Plan during the development of the Program Objectives Memorandum (POM). The POM contains force and resource recommendations, with rationale and risk assessment, and must conform with the fiscal guidance issued by the Secretary of Defense (SECDEF). It is developed by fiscal year and is concentrated 2 fiscal years in

advance. It includes projections of forces programmed for 8 fiscal years and manpower programmed for 6 fiscal years. The required forces are first identified, then manpower requirements necessary to support the planned forces are determined. The Department of the Navy's POM is the annual recommendation to SECDEF for the detailed application of resources. Upon receipt and analysis of the POM submission for each military department, SECDEF issues program decisions. These decisions include intended adjustments in the POM submission. Oppositions to these decisions may be submitted by the military departments. When program decisions are finalized, departments and agencies submit budget estimates for the budget year, usually the next fiscal year, to SECDEF. Upon receipt and after evaluation of the budget estimates, SECDEF issues program budget decisions and submits the Department of Defense (DoD) budget as part of the President's budget submitted to Congress. CNO distributes the funds after Congress approves them.

1.2.4 Manpower Management. CNO directs and coordinates the development and implementation of the manpower planning system to:

- a. Determine minimum military and civilian manpower requirements to achieve approved operational and mission demands.
- b. Provide staffing standards for functions performed ashore and afloat, based on recognized management and industrial engineering techniques and objective determinations of workload.
- c. Provide a system for combining manpower requirements information at levels above the activity level to support and justify Navy manpower requirements during all stages of the planning, programming, and budgeting system.
- d. Relate support manpower requirements of the shore establishment to the changing demands of the operating forces.
- e. Provide reliable planning information to personnel inventory managers, both military and civilian.
- f. Ensure manpower requirements for maintenance and operation of new weapon systems, equipment, and initiatives are specified sufficiently in advance of fleet introduction to allow them to be considered in the programming cycle and for development of requisite personnel skill levels.
- g. Reduce response time to management queries for manpower information.

1.2.4.1 While policy control and direction of the Navy manpower requirements system is vested in CNO, support for these programs is provided by the Navy Manpower Analysis Center.

1.2.4.2 Manpower requirements are included in the DoD planning, programming, and budgeting system. This system operates on an 18-month cycle and is repeated annually. Navy manpower requirements are submitted via the POM.

1.2.4.3 CNO publishes annual guidelines to manpower claimants concerning submission of manpower requests for consideration in the POM process. Manpower claimants screen, assign priorities, and justify requests for additional manpower and submit only those requests which are realistic and competitive. Manpower claimants must realize that in POM development, all requests for resources; for example, manpower, training, support, and fiscal, compete with each other and only the most competitive requirements may be approved. Additional manpower funding must be justified by the manpower claimant, the sponsor, and CNO. Manpower requests which contribute to increased readiness or readiness improvements have the highest chance of success for funding during the POM year.

1.2.5 Training

1.2.5.1 Commanding officers shall ensure, as a minimum requirement, all officers or aviation ordnance officers assigned to the squadron maintenance department attend the appropriate Fleet Aviation Specialized Operational Training Group Atlantic/Pacific (FASOTRAGRULANT/PAC) or Naval Air Maintenance Training Group (NAMTRAGRU) course prior to or within 60 days after assuming their duties.

1.2.5.2 Newly commissioned or designated Aviation Ordnance Officers (Navy 6360/7361 and Marine Corps 6502) shall enroute to their first aviation ordnance billet assignment, be ordered to attend the Aviation Ordnance Officers Career Progression (AOOCP) Course, Level I at Naval Aviation Schools Command, Pensacola, Florida, (Course Number Q-4E-0010). The AOOCP Course is a 6-week period of instruction that is designed for newly commissioned Aviation Ordnance Limited Duty and Chief Warrant Officers. The course is formatted to build upon previously acquired skills and provide a professional career path for aviation ordnance officers. Senior enlisted (Navy E-7 through E-9, and Marine Corps E-8 through E-9 MOS 6591), aviation ordnance personnel should also attend the AOOCP course at the earliest opportunity. See volume I, chapter 6.3, paragraph 6.3.6.1.

1.2.5.3 Mid/upper-level Navy and Marine Corps aviation ordnance officers shall attend the AOOCP Course, Level

II/III, (Course Numbers Q-4E-011/Q-4E-0012 when enroute to assigned ordnance management billets. See volume I, chapter 6.3, paragraph 6.3.6.1.

1.2.6 Material Management. CNO directs and coordinates the development and implementation of the material acquisition planning system via the systems commands. Material requirements, like manpower requirements, are submitted via the POM.

1.2.7 Operating Procedure. The NOMMP is intended to establish standard operating procedures and standard maintenance procedures and programs for all Navy and Marine Corps organizational, intermediate, and depot level maintenance activities. It is intended to provide an integrated system to perform ordnance maintenance and all related operating and support functions. Key features require that the NOMMP be:

- a. Comprehensive.
- b. Consolidated.
- c. Based on fleet input.
- d. Command oriented.
- e. Easy to read and use.

1.2.7.1 The NOMMP is intended to be more than a directive. It is analogous to Naval Air Training and Operating Procedures and should be used by field activities to guide daily operations. In reality, it should be a "users manual." The NOMMP should have multiple uses at all echelon. It should:

- a. Guide daily operations.
- b. Establish airborne weapon maintenance requirements.
- c. Provide a basis for training documents.
- d. Address weapon system support planning.
- e. Function as a standard reference document.

1.2.7.2 The NOMMP is intended to include CNO objectives, goals, and priorities; provide maintenance concepts and standards; define responsibilities and command relationships; assign specific maintenance tasks and functions; detail maintenance procedures; and provide management tools, special programs, and Maintenance and Material Management (3M) documentation procedures.

1.2.8 Scope

1.2.8.1 The NOMMP is designed to support CNO readiness objectives by ensuring timely and effective fleet logistics support. The NOMMP governs the management of naval weapons maintenance operations, procedures, and associated reporting systems.

1.2.8.2 The NOMMP applies to all Navy and Marine Corps activities concerned with the operation, maintenance, or rework of weapons, systems, or equipment. In addition to specifying maintenance processes, the NOMMP addresses interactive programs including maintenance management, maintenance engineering, fleet support, inventory management, asset and fiscal resources, and associated reporting and automatic data processing systems. NAVAIRSYSCOM cognizant airborne weapons addressed are defined in the following paragraphs.

1.2.8.2.1 Air Launched Missiles. Surface and submarine variants of the missiles listed below are retained under NAVAIRSYSCOM cognizance.

- | | |
|-------------|-----------------|
| a. AMRAAM | i. SIDEARM |
| b. HARM | j. SIDEWINDER |
| c. HARPOON | k. SLAM/SLAM-ER |
| d. HELLFIRE | l. SPARROW |
| e. JSOW | m. WALLEYE |
| f. MAVERICK | n. TOW |
| g. PENGUIN | o. TALD/ITALD |
| h. PHOENIX | |

1.2.8.2.2 Airborne Ordnance/Ammunition

- a. Bombs/Guidance Kits and related components.
- b. Special weapons.
- c. Aircraft gun ammunition.

- d. Cartridges and cartridge actuated devices.

- e. Aircraft rockets, rocket launchers, and jet/rocket assisted takeoff rocket motors.

- f. Propellant Actuated Devices.

- g. Pyrotechnics and screening and marking devices.

- h. Airborne electronics warfare expendable countermeasures, including infrared decoy flares, chaff countermeasures, and active expendable decoys.

- i. Underwater sound signals and sonobuoys.

1.2.8.2.3 Aircraft guns.

1.2.8.2.4 Aerial targets and drones.

1.2.8.2.5 Unmanned air vehicles and remotely piloted vehicles.

1.2.8.2.6 Aircraft armament equipment associated with the above weapons.

1.2.8.2.7 Armament support equipment, weapons support equipment, and logistics support equipment associated with the above weapons.

1.2.9 Policy. CNO provides the basis for the NOMMP and sets policy in the basic instruction for the assignment of maintenance responsibilities to all activities of the naval establishment concerned with the maintenance, repair, or support of ordnance, systems, or equipment.

1.2.10 Responsibility. Weapons maintenance is a command responsibility administered through the military chain of command. Technical management is exercised in consonance with this instruction, together with directives developed and published by NAVAIRSYSCOM.

CHAPTER 1.3

Ordnance Maintenance Concepts, Levels, and Types

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CHAPTER 1.3

Ordnance Maintenance Concepts, Levels, and Types

1.3.1 Maintenance Concepts

1.3.1.1 The Naval Ordnance Maintenance Management Program (NOMMP) supports the Chief of Naval Operations readiness, safety, health and environmental objectives and provides for optimum use of manpower, facilities, material, and funds.

1.3.1.2 The NOMMP implements the policies of the Department of Defense equipment maintenance program, including the three-level maintenance concept, established by Department of Defense Directive 4151.18 of 12 August 1992, (NOTAL). The NOMMP is based on the three-level maintenance concept and is the basic authority governing management of organizational, intermediate, and depot level ordnance maintenance. The NOMMP provides the management tools required for efficient and economic use of personnel and material resources in performing ordnance maintenance. This instruction also provides the basis for establishing standard organizations, procedures, and responsibilities for the accomplishment of all maintenance on naval ordnance associated material and weapons equipment. The division of maintenance into three levels allows management to:

- a. Classify ordnance maintenance functions by levels.
- b. Assign responsibility for ordnance maintenance functions to a specific level.
- c. Assign ordnance maintenance tasks consistent with the complexity, depth, scope, and range of work to be performed.
- d. Accomplish any particular ordnance maintenance task or support service at that level which ensures optimum economic use of resources.
- e. Collect, analyze, and use data to assist all levels of management concerned with the NOMMP.

1.3.2 Maintenance Levels

1.3.2.1 Organizational Level Maintenance. Organizational level maintenance is also referred to as the

organizational maintenance activity (OMA), and is that maintenance which is normally performed by an operating unit on a day-to-day basis in support of its own operations. The organizational level maintenance mission is to maintain assigned aircraft, aeronautical equipment, and ordnance in a full mission-capable status while continually improving the local maintenance process. This work is usually accomplished by aviation ordnance or aircraft maintenance personnel assigned to aircraft squadrons. However, in some instances organizational level maintenance may be done by intermediate or depot level activities. Organizational level maintenance functions generally can be grouped under the categories of:

- a. Loading and unloading ordnance and stores aboard aircraft or ships.
- b. Reconfiguration and functional testing of aircraft weapons release and control, missile, and gun systems.
- c. Arming and dearming.
- d. Inspection, servicing, and handling of airborne armament equipment and armament handling equipment.
- e. On-equipment corrective and preventive maintenance.
- f. Installation and removal of wings, fins, canards, bomb fuzes, arming wires, etc.
- g. Record keeping and report preparation.
- h. Compliance with notice of ammunition reclassifications and technical directives as appropriate.
- i. Aircraft interface checkout.

1.3.2.1.1 JDAM Navy organizational level maintenance will occur on the flight deck (CV, CVN, LHA, LHD), or flight line (NAS) and at (MCAS) and forward sites. It will consist of uploading and downloading, visual inspection, arming and de-arming of the bomb rack, and aircraft interface checkout.

1.3.2.2 Intermediate Level Maintenance. Intermediate level maintenance is also referred to as the intermediate maintenance activity (IMA), and is that maintenance which is the responsibility of, and performed by, designated maintenance activities in support of using organizations. The intermediate level maintenance mission is to enhance and sustain the combat readiness and mission capability of supported activities by providing quality and timely material support at the closest location with the lowest practical expenditure. Intermediate level maintenance is categorized to ensure particular ordnance maintenance functions are performed at that level which ensures optimum economic use of resources. Intermediate level maintenance IMA also referred to as the Aircraft Intermediate Maintenance Department is that maintenance authorized and designated to be performed by a Naval Air Station, Marine Corps Air Station, Marine Aviation Logistics Squadron, naval magazine, or shipboard weapons department. Intermediate level maintenance functions can generally be grouped under the categories of:

- a. Requisition, receipt, storage, assembly, delivery, and issuance of ordnance to using units.
- b. Minor repair and corrosion control of airborne armament equipment and armament handling equipment.
- c. Assembly, disassembly, inspection, testing, testing of all-up-rounds and replacement of component parts, reprogramming packaging, and unpackaging of ordnance to the extent specified in applicable maintenance instruction manuals, operating and service instruction manuals, or technical directives.
- d. Storage monitoring.
- e. Compliance with notice of ammunition reclassifications and technical directives as appropriate.
- f. Performs limited repair on aircraft armament equipment (AAE) or armament weapons support equipment (AWSE).
- g. JDAM intermediate level maintenance will occur within the weapons department facilities (afloat and ashore) and Marine Corps Logistics Squadrons (MALS), and will consist of receipt, storage, issue, packing and unpacking from the container to include resealing of vapor barrier bags, visual inspection, installation/removal of ancillary equipment (e.g. bomb, fins, cables, fuzes, etc.), inspection, minor maintenance as authorized under the warranty, and transportation functions. JDAM initi-

ated built-in-test/reprogramming (IBIT/reprogramming) will be performed at the ashore weapon's department, MALS, and aboard ship (CV, CVN, LHA, LHD). For CV and CVN operations, IBIT/Reprogramming will be performed on the guidance set either before or after weapon assembly using the AN/GYQ-79 Digital Computer Set, commonly referred to as the Common Munitions BIT and Reprogramming Equipment (CMBRE). The CMBRE performs IBIT, automatic reprogramming of guidance set software (if required) and records test results on a maintenance log file. The 2nd deck G3 shop and the forward/aft ordnance transfer areas have been designated as the primary IBIT/reprogramming areas on the carrier. JDAM software changes and updates will be done prior to the next flight of the guidance set.

1.3.2.3 Depot Level Maintenance Functions. That maintenance which is performed at industrial establishments to ensure continued flying integrity of airframes, flight systems, and ordnance during subsequent operational service periods. Depot level maintenance is performed on ordnance, ordnance armament equipment, and armament handling equipment which require major overhaul or a complete rebuilding of parts. It includes assemblies, subassemblies, and end items, including manufacture of parts, modification, testing, and reclamation. Depot maintenance activities support lower categories of maintenance by providing technical assistance and performing maintenance which is beyond the capability of lower level maintenance activities, including, in some cases supply support. It provides more extensive facilities for repair than lower level maintenance activities. Depot level maintenance establishments perform a variety of maintenance actions, the extent of which depends on the commodity requiring maintenance. The assigned depot level activities are identified in their appropriate commodity chapters. Depot level maintenance actions can generally be grouped into the two categories described below.

1.3.2.3.1 The primary mission of depot level activities is to augment stocks of serviceable material and to support organizational and intermediate maintenance activities through the use of more extensive facilities and equipment. The maintenance actions performed by these activities can be grouped under the following categories:

- a. Receipt, segregation, storage, and issue of ordnance, all-up-round air launched missiles, and individual missile components.

b. Test all-up-round missiles and replacement of component parts.

c. Assemble, disassemble, test, package, and unpackage ordnance to the extent specified in applicable maintenance instruction manuals, operating and service instruction manuals, or technical directives.

d. Perform scheduled and unscheduled maintenance actions necessary to maintain weapons test equipment, weapons handling equipment, and air launched missile containers.

e. Repair, test, modify, and check of designated test equipment.

f. Calibration of designated equipments.

g. Incorporate designated technical directives.

h. Perform authorized repair of weapon replaceable assemblies and shop replaceable assemblies.

i. Disposition of all weapon replaceable assemblies and shop replaceable assemblies to other industrial establishments which are beyond their maintenance capability.

j. Provide technical assistance and field teams to supported units when requested.

k. Compliance with notice of ammunition reclassifications and technical directives as appropriate.

1.3.2.3.2 Depot level maintenance also encompasses that maintenance which is performed on ordnance, ordnance armament equipment, and armament handling equipment which requires major overhaul or a complete rebuilding of parts. It includes assemblies, subassemblies, and end items, including manufacturing parts, modifications, testing, and reclamation. Maintenance functions performed by these assigned depot level activities can be grouped under the following functions:

a. Overhaul and major repair of ordnance, sections, and certain related support equipment.

b. Incorporation of designated technical directives.

c. Assembly, disassembly, inspection, testing, reprogramming, packaging, and unpackaging of ordnance to the extent specified in applicable maintenance instruction manuals, operating and service instruction manuals, or technical directives.

d. Maintenance of test equipment.

e. Manufacture and modification of designated parts and kits.

f. Provide technical assistance and field teams to supported units when requested.

g. Modification of ordnance, sections, components, and certain related equipment.

h. Record keeping and reporting of maintenance performed at this level. Depot and intermediate activities may have the capability to perform some lower level maintenance actions as defined above.

i. Remanufacture of components or assemblies when repair becomes unfeasible or uneconomical.

1.3.2.4 Depot Level Maintenance for JDAM. Weapons Station (WPNSTA) will accomplish Depot (D)-Level tasks that are beyond the I-Level capability and authorized in T. O. 11K31-2-7/NAVAIR 11-5A-37 under the warranty. Those tasks may include:

a. Complying with tasks outlined in approved engineering change proposals/ordnance changes, reseal barrier bags, repackaging, reconfiguring fleet issue, storage of fleet returned items, storage, shipment and receipt of depot returns.

b. The D-Level maintenance (Navy second level) for JDAM consists of contractor repair and replacement of any failed unit under a 20-year extended repair warranty. Details of the warranty are provided as follows:

1. The JDAM extended repair warranty provides that each JDAM system (hardware, software, and container) will comply with the JDAM system specification requirements (as highlighted in bold print and underlined in the JDAM system specification) and is free from defects in material and workmanship for a 20-year shelf life or 5-year service life (time out of the container), whichever ever comes first, from the date on the DD 250 form. This includes parts, labor, failure analysis, disposal of failed guidance sets, maintaining warranty data, and round trip transportation cost from the point of origination in the contiguous United States (CON-US). Boeing Aerospace Corp. has the option to repair or replace a failed guidance set. The repaired or replaced guidance set will assume the remaining warranty time duration that remained on the failed guidance set. Warranted defects shall be documented and reported in accordance with current service directives. Failures out-

side the scope of the warranty (government induced) shall be the responsibility of the government. The program office intends to include a time and material line item in the contract to handle government induced failures.

1.3.2.5 HELLFIRE and TOW missile maintenance requirements for the fleet at the O, I, level and at the weapons stations are no longer required. Maintenance philosophy for these systems is now O to D. When depot level maintenance is performed the repair data is entered directly into an electronic database. No logbook entries are required. Airborne Weapons Bulletins (AWB) and Airborne Weapons Changes (AWC) are reported by compliance direction stipulated in the directive.

1.3.3 Maintenance Types

1.3.3.1 There are two types of ordnance maintenance performed within the naval establishment without distinction as to levels of maintenance. They are rework and upkeep.

1.3.3.2 Rework may be performed on ordnance, ordnance armament equipment, armament handling equipment, and aerial targets. It is performed by industrial type activities assigned the mission, task, or functional responsibility of providing maintenance program sup-

port. Rework is performed with military and civilian personnel and managed by the Naval Air Systems Command. Rework is comprised of maintenance and modification functions.

a. Maintenance functions are those functions required to maintain or restore the inherent designed service levels of performance, reliability, and material condition; they span complete rebuild through reclamation, refurbishment, overhaul, repair, replacement, adjustment, servicing, and replacement of system consumables. They also include inspection, calibration, and testing.

b. Modification functions are those functions required to change or improve design levels of performance, reliability, and material condition. The term modification, as used in this instruction, includes alteration, conversion, engineering change, modernization, etc.

1.3.3.3 Preventive maintenance is performed on ordnance, ordnance armament equipment, armament handling equipment, and aerial targets. It is performed by military activities that are assigned the weapons or equipment, or assigned the mission, task or functional responsibility of providing direct support to such activities. Preventive maintenance is performed by military personnel and is managed by the type commanders.

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CHAPTER 1.4

Organization for Naval Ordnance Maintenance

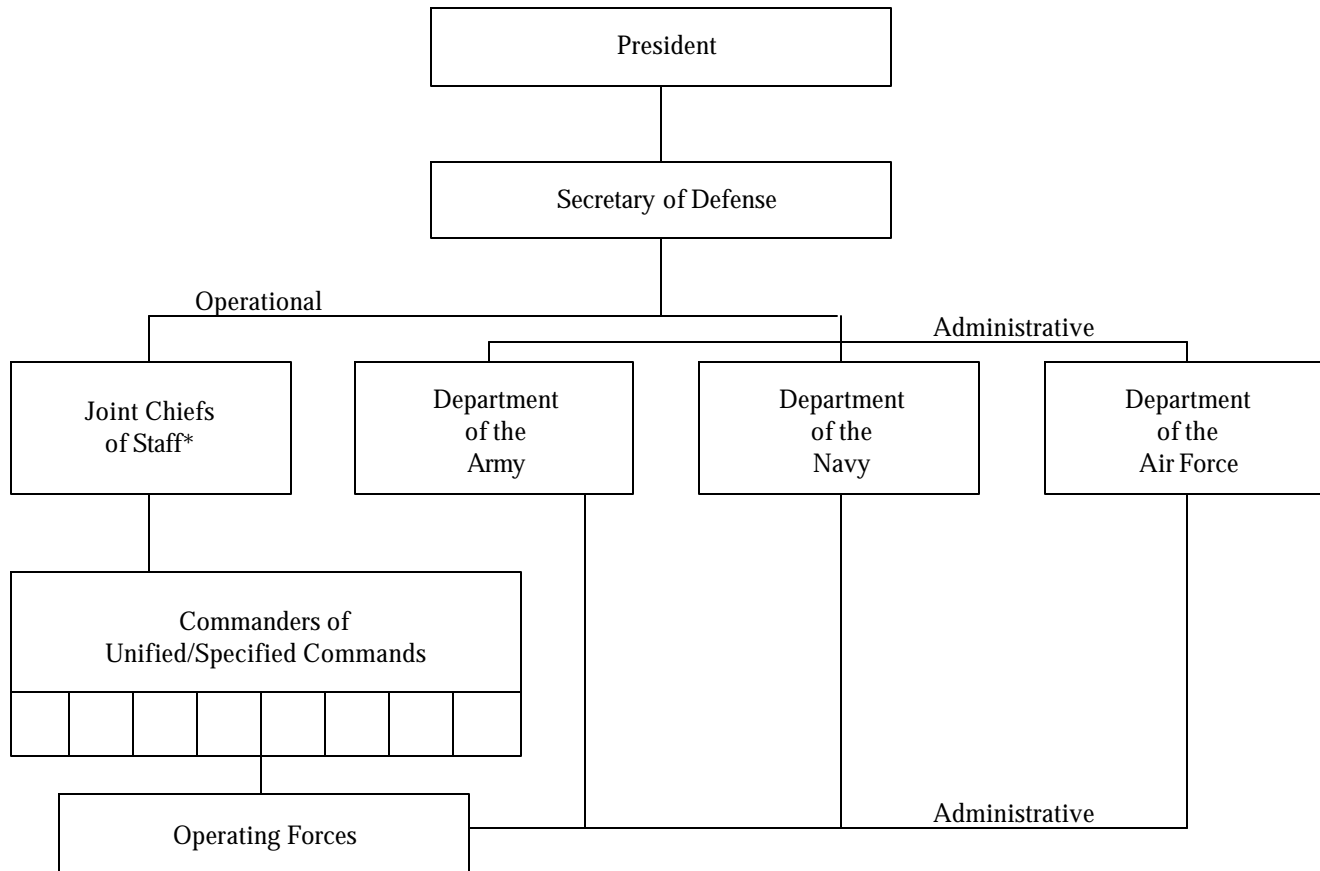
1.4.1 General. This chapter is intended to provide a working understanding of the Navy organization and to serve as a reference source document as opposed to an authoritative source for organizational matters. This chapter depicts the Navy command organization concerned with the operation, maintenance, and rework of ordnance, systems, equipment, and capabilities. This chapter portrays the chain of command to the shore establishment and the dual lines of authority to the operating forces. (No attempt was made to depict all activities of the Navy and Marine Corps. To do so would necessitate an extremely bulky document that would require frequent changes. Instead, the organizational structure is depicted in a manner that will permit most users of this document to identify the individual chains of command).

1.4.2 Command of Combatant Forces. The Secretary of Defense (SECDEF) exercises responsibility over the military departments by means of two lines of control. One chain of command runs from the President to the SECDEF through the Joint Chiefs of Staff (JCS) to the commanders of unified and specified combatant commands made up of operational forces from any or all of the three military departments. The other chain of command runs from the President to the SECDEF to the secretaries of the military departments and through service channels to the individual commands. The chain of command through the commanders of unified and specified commands to the operation forces involves the operational command of these forces and is properly referred to as the operational chain of command. The chain of command through the service secretaries embraces the training and readiness of military forces and their administration and support. This chain is referred to as the administrative chain of command. The operational and administrative chain of command is illustrated in figure 1-4-1.

1.4.3 Operational Command of Combatant Forces. With some exceptions, the operating forces of all the services are assigned for operational command to the unified and specified combatant commands. A unified command has a broad continuing mission under a single commander and is composed of significant assigned components of two

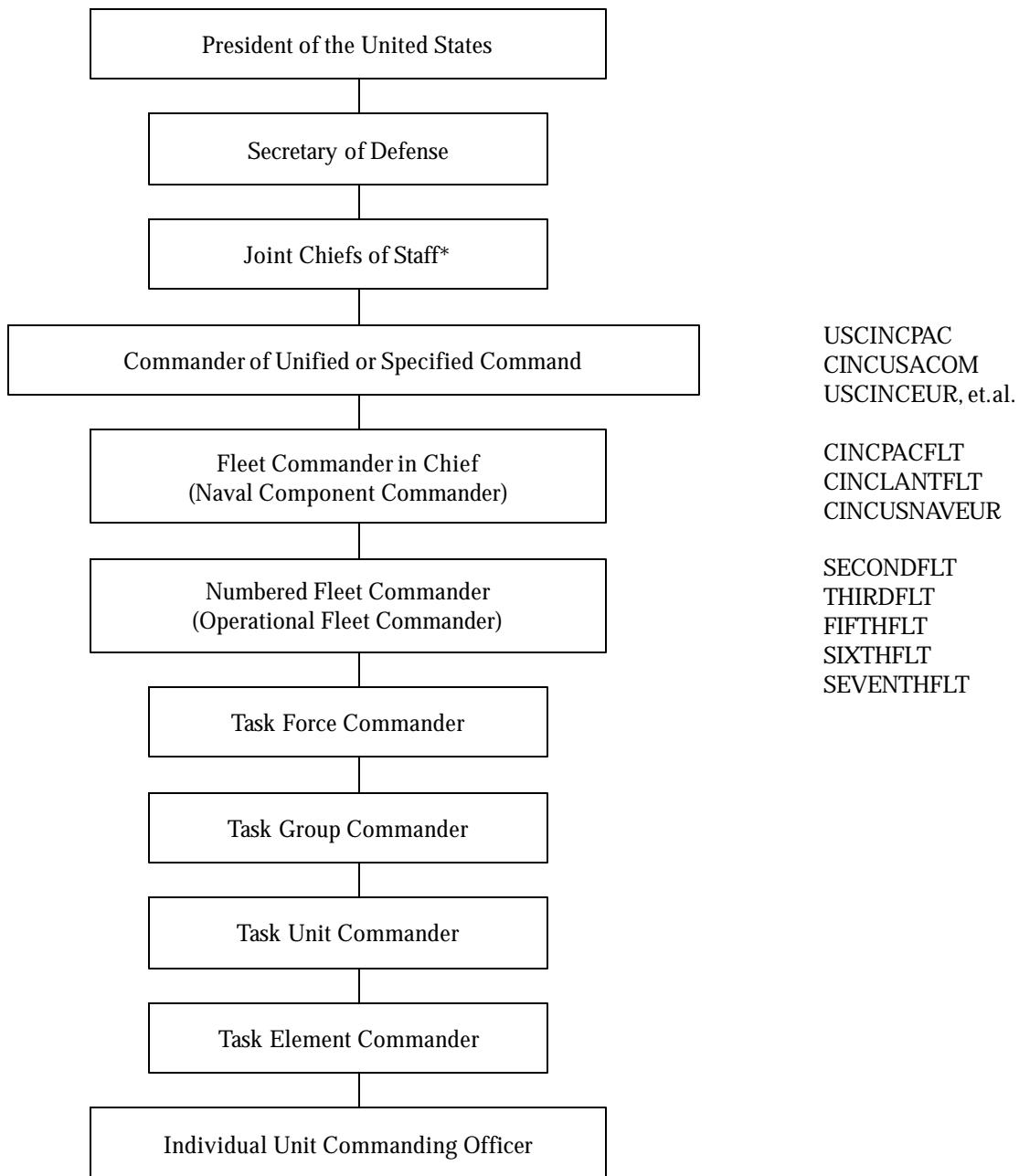
or more services. A specified command has a broad continuing mission and is normally composed of forces from but one service. Commanders of unified or specified commands are responsible to the President and the SECDEF for the accomplishment of military missions assigned to them. Orders to these commanders are issued by the President or the SECDEF or by the JCS with authority and direction from the SECDEF. These commanders have operational command over the forces assigned to them. Thus, in operational matters, the chiefs of the individual services have no direct operational authority over the forces of their services that are under the command of the commanders of the unified and specified commands. A service chief's voice in operational matters is a function of his role as a member of the JCS who provides strategic direction and guidance to the commanders of unified and specified commands. The operational chain of command is illustrated in figure 1-4-2.

1.4.4 Administrative Control of Combatant Forces. Unified and specified combatant commands are established by the authority of the President. Once established, the military departments are charged with the responsibility to assign forces to those commands. Each military department retains responsibility for the administration of forces assigned to the combatant commands. Title 10, U.S. Code, Section 5082 assigns responsibility to the Chief of Naval Operations (CNO), under the direction of the Secretary of the Navy (SECNAV), to determine the personnel and the material requirements of Navy operating forces, including the order in which ships, aircraft, surface craft, weapons, and facilities are to be constructed, maintained, altered, repaired, and overhauled. Additionally, the CNO coordinates and directs the efforts of the bureaus and offices of the executive part of the Department of the Navy as may be necessary to make available and distribute, when and where needed, the personnel and material required. Each military department has a responsibility to organize, train, and equip forces for the service's combat role. The service chiefs exercise these responsibilities through their administrative chains of command to the operating forces. The administrative chain of command is illustrated in figure 1-4-3.



*The Joint Chiefs of Staff, consisting of the Chairman; the Chief of Staff, U.S. Army; the Chief of Naval Operations; the Chief of Staff, U.S. Air Force; and the Commandant of the Marine Corps; and supported by the Organization of the Joint Chiefs of Staff, are the principal military advisers to the President, the National Security Council, and the Secretary of Defense. In performance of their functions of advising the Secretary of Defense, and subject to the authority and direction of the President and the Secretary of Defense, it is the duty of the Joint Chiefs of Staff to serve as advisers and as military staff in the chain of operational command with respect to unified and specified commands, and to coordinate all communications from the President and Secretary of Defense to unified and specified commands, and to coordinate all communications in matters of joint interest addressed to the commanders of the unified or specified commands by other authority.

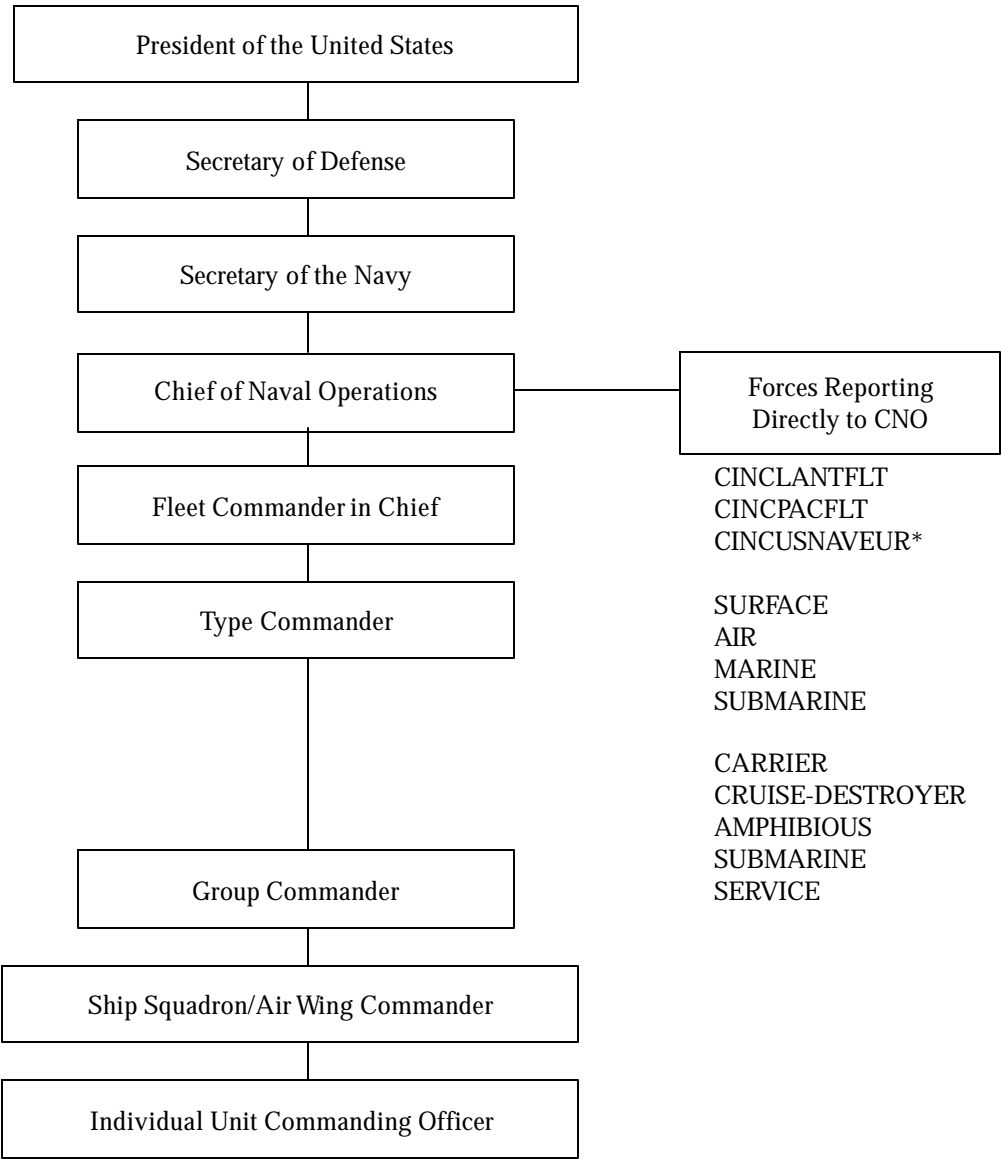
Figure 1-4-1. Chain of Command



Note

*The JCS are in the operational chain of command as advisers and as military staff with respect to the unified and specified commands; however, the JCS do not exercise operational command or control of forces, except as directed by the President or Secretary of Defense.

Figure 1-4-2. Operational Chain of Command of the Operational Forces



Note

*CINCUSNAVEUR does not have administrative control of forward deployed CINCLANTFLT units, but does report to the CNO on administrative matters.

Figure 1-4-3. Administrative Chain of Command of the Operational Forces

1.4.5 Command Structure

1.4.5.1 SECNAV is the head of the Department of the Navy. Under the direction, authority, and control of SECDEF, SECNAV is responsible for the policies and control of the Department of the Navy, including its organization, administration, operation, and efficiency. The civilian executive assistants to the SECNAV are the Under Secretary of the Navy, the Assistant Secretaries of the Navy, the General Counsel of the Navy, and the Deputy Under Secretary of the Navy. It is the Secretary's policy to assign department-wide responsibilities essential to the efficient administration of the Department of the Navy to and among the civilian executive assistants. Each civilian executive assistant, within the assigned area of responsibility, is the principal adviser and assistant to the Secretary on the administration of the affairs of the Department of the Navy. In carrying out these duties, the civilian executive assistants do so in harmony with the statutory position of the CNO and the Commandant of the Marine Corps (CMC) as set forth in Navy regulations. Each is authorized and directed to act for the Secretary within his assigned area of responsibility. The National Security Act of 1947, as amended, governs the missions and responsibilities of the Department of the Navy and provides for a secretariat. The Navy Department was established by the Act of 30 April 1978. The organization of the Department of the Navy is illustrated in figure 1-4-4.

1.4.5.2 The CNO is the principal executive official of the office of the CNO which is a component of the executive part of the Department of the Navy. CNO takes precedence over all other officers of the Navy service in the performance of his duties within the Department of the Navy. The CNO is the Navy member of the JCS and is responsible, in coordination with CMC, for keeping the SECNAV fully informed on matters considered or acted upon by the JCS. As a member of the JCS, CNO is responsible to the President and the SECDEF for duties external to the Department of the Navy as prescribed by law. Interim to the administration of the Department of the Navy, the CNO commands the operating forces of the Navy (consistent with the operational command vested in the commanders of unified or specified combatant commands), which includes the several fleets, seagoing forces, district forces, fleet marine forces and other assigned Marine Corps forces, the Military Sealift Command, and other forces and activities as may be assigned by the

President or the SECNAV. The CNO is responsible to the SECNAV for the utilization of resources and the operating efficiency of all assigned commands and activities.

1.4.5.3 The CMC commands the Marine Corps and is directly responsible to SECNAV for the administration, discipline, internal organization, training requirements, efficiency, and readiness of the Marine Corps; for the operation of its material support system and for the total performance of the Marine Corps. The CMC is the Marine Corps member of the JCS and is responsible for keeping the SECNAV fully informed on matters considered or acted upon by the JCS. In this capacity, as a member of the JCS, CMC is responsible to the President and the SECDEF for duties external to the Department of the Navy as prescribed by law. The CMC is directly responsible to the CNO for the organization, training, and readiness of those elements of the operating forces of the Marine Corps assigned to the operating forces of the Navy. Such Marine Corps forces, when so assigned, are subject to the command exercised by the CNO over the operating forces of the Navy. Likewise, members or organizations of the Navy, when assigned to the Marine Corps, are subject to the command of the CMC.

1.4.6 Operating Forces of the Navy

1.4.6.1 The operating forces of the Navy are combat or combat-support-oriented. Combatant forces and certain supporting forces are assigned for duty under the commander of a unified or specified command. The operating forces of the Navy include:

1.4.6.1.1 Major commands afloat, operating directly under the command of the CNO.

1.4.6.1.2 The Military Sealift Command.

1.4.6.1.3 The composition of both Pacific and Atlantic Fleets, including the forces and commands by type, the titles of which are self-explanatory:

- a. Fleet Marine forces.
- b. Naval air forces.
- c. Naval surface forces.
- d. Submarine forces.

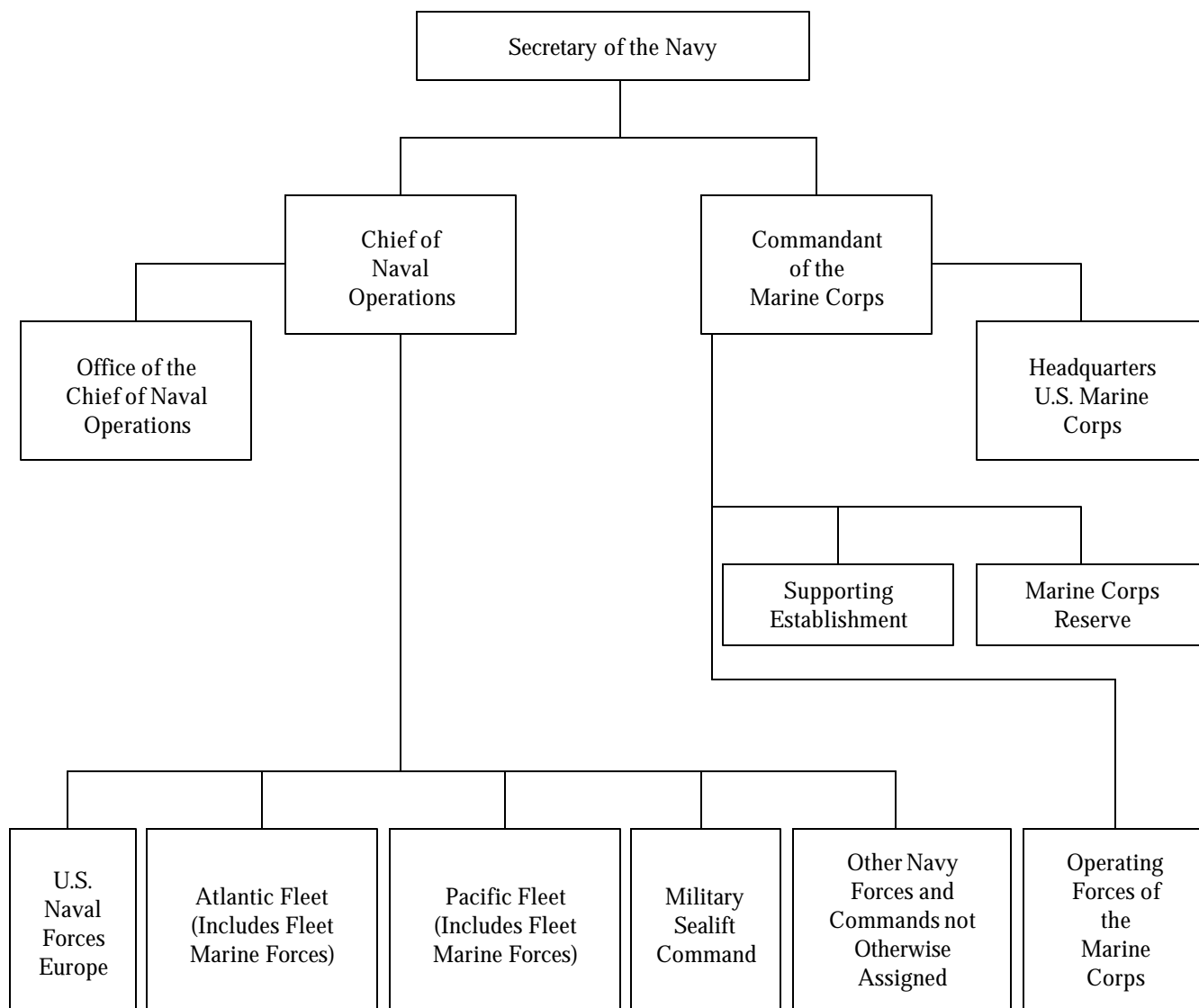


Figure 1-4-4. Organization of the Department of the Navy

1.4.6.1.4 Shore activities assigned to the operating forces.

1.4.6.2 The operating forces of the Navy set forth in subsequent paragraphs consist of the fleets, seagoing forces, the Military Sealift Command, and such shore activities of the Navy and other forces and activities as may be assigned by the President or the SECNAV. The operating forces are responsible for naval operations necessary to carry out the department's role in upholding and advancing the national policies and interests of the United States. The administrative military organization of the operating forces, headed by the CNO, represents a continuous chain of command from the CNO to a succession of lower echelons. It must be understood that the operating forces are organized in permanent fashion in the administrative chain of command, while the operational chain of command is task oriented and can be structured as necessary to meet operational requirements.

1.4.7 Dual Chains of Command. Title 10, U.S. Code, Section 124 authorizes the President to establish unified and specified combatant commands to perform military missions. The military departments are directed by this code to assign forces to those combatant commands. The forces so assigned are under the operational command of the commander of the unified and specified command. The commanders of the unified and specified commands are responsible to the President and the SECDEF for the military missions assigned. However, each military department retains responsibility for the administration of forces assigned to those commands. In order to provide for administrative control by the military department and operational command by the commanders of unified and specified commands, parallel chains of command to the operating forces are required. The commander of the unified or specified command, utilizing the operational chain of command, exercises operational command of assigned Navy forces. The CNO, utilizing the administrative chain of command, exercises administrative control of all Navy forces. While it may appear to be duplicative, the existence of a parallel fleet command structure is actually an efficient and effective method of differentiating these two necessary functions. In general, these separate organizations are separate in name only, are dual hatted, and are manned by the same personnel, although exceptions do exist. The administrative organization is permanent in nature and supports, with forces and staff personnel, the task oriented operational organization. Since the functions of the two separate organizations must be responsive to both the CNO and the unified commander, the separate functions must be differentiated.

1.4.8 Operational Organization. Command of the operating forces of the fleet at all echelons is exercised through the operational organization. The Department of the Navy, through its administrative organization, organizes, trains, and equips forces, which are then employed operationally in the unified command structures. The operational chain of command begins with the President and the SECDEF as national command authorities and continues down through the individual commanding officers of ships, squadrons, and submarines as illustrated in figure 1-4-2.

1.4.9 Administrative Organization

1.4.9.1 To carry out the Department of the Navy's responsibilities for providing ready forces (organized, trained, and equipped) to the combatant commanders, the operating forces of the Navy are administratively organized to develop fleet readiness. As stated in Navy Regulations, fleet readiness is one of the two major objectives (force modernization being the other) of the Department of the Navy. Fleet readiness consists of:

e. Personnel readiness, including the quantitative aspect of meeting total manning requirements and the qualitative aspect of providing the necessary skills for operations and maintenance.

f. Material readiness, which encompasses the required maintenance and logistic support for effective operations.

g. Training readiness, which requires sufficient operating time in terms of steaming days and flying hours and sufficient participation in exercises to ensure a capable and proficient military force.

1.4.9.2 The administrative chain of command of the Navy operating forces begins with the President and the SECDEF and continues through the SECNAV to the individual unit commanding officers of the ships, squadrons, and submarines as illustrated in figure 1-4-3.

1.4.10 Organization of Fleet Staffs

1.4.10.1 In the administrative chain of command, fleet staffs are organized for the purpose of developing fleet readiness in specific terms of personnel, material, and training readiness.

1.4.10.2 Ashore Staffs. The fleet commanders and type commanders and their staffs are based ashore. These staffs are structured primarily to perform functions in support of the maximization of readiness. Their composition is not constrained by the space limitations that apply to afloat staffs; consequently, the shore based staffs are assigned the major portion of responsibility for readiness support. The location of the

headquarters and staffs must be at a base concentration of fleet activity to ensure the necessary accessibility for the close association required.

1.4.10.3 Afloat Staffs. Group and squadron commander staffs are considered afloat commands. Surface group commander staffs are normally embarked in one of the ships of their command. Group and squadron commander staffs are structured to monitor, develop, and support all three aspects of fleet readiness. These staffs must be sized to accomplish their operational responsibilities in the operational chain of command. In those instances where shipboard limitations preclude accommodation of an entire afloat staff, certain personnel can be left ashore or aboard other ships as dictated by the nature of the operation.

1.4.11 Operational Task Organization. Fleet commanders and numbered fleet commanders have geographically-oriented responsibilities and are permanently organized and assigned to a unified (theater) command. Below the numbered fleet staff level, the operational chain of command is task-oriented. Organizational assignments in the operational chain of command are not permanently constituted. The task organization is predicated on the mission by a warplan or an operational plan of a commander of a unified command, and is further delineated by the fleet commanders (naval component commander) and the numbered fleet commander. The task organization must be explicitly set forth by the operation order or operation plan. Changes in the task organization may occur with changes in forces assigned to the task group, geographic area of operation, military task, or tactical situation.

1.4.12 Operational Staffs. Task organization commanders and staffs are created as required by appropriate operation plans and orders. Personnel are assigned on an additional duty basis from: (1) existing administrative staff organization; (2) commands within the task organization; and (3) where special skills or large numbers of personnel are required by augmentees on additional duty from outside the task organization. The operational commander and his staff may be embarked in a seagoing unit of the task organization which would provide the requisite command, control, and communication facilities. When adequate or suitable facilities are not available afloat, the operational staff may be located ashore if the peculiar command, control, and com-

munications requirements for the level of command can thereby be better provided. Operational commanders may also be located ashore to facilitate command of land-based forces.

1.4.13 Operational Commanders. Task forces are normally constituted for the purpose of conducting broad naval warfare missions such as establishing naval superiority, conducting general strike operations, or seizing territory ashore, or any combination of the functions of the sea control mission. The titles of task forces reflect the broad nature of their tasking (for example, maritime surveillance and reconnaissance force, amphibious force mobile logistics support force, etc.). Task groups, units, and elements normally have progressively narrower operational missions.

1.4.14 Commander in Chief, U.S. Atlantic Fleet. The Commander in Chief, U.S. Atlantic Fleet (CINCLANTFLT) in peacetime, limited war, and general war, conducts operations to ensure control of the sea and air in the Atlantic Command area (which includes portions of the Atlantic, Pacific and Arctic Oceans, and the Caribbean Sea). CINCLANTFLT also provides combat-ready U.S. naval forces (including administrative, logistics, and planning support thereto) to the Atlantic Command and other commands as directed in order to defend the United States against attack through the Atlantic Ocean or Caribbean Sea. CINCLANTFLT also maintains the security of the Atlantic Command and supports the operations of adjacent allied and national commanders. The organizational relationship of operating force type commands (TYCOM) under CINCLANTFLT are illustrated in figure 1-4-5.

1.4.15 Commander, Naval Surface Force, U.S. Atlantic Fleet. The Commander Naval Surface Force, U.S. Atlantic Fleet, under CINCLANTFLT, maintains combat readiness of assigned Atlantic and European theater naval surface forces. The Commander, Naval Surface Force, U.S. Atlantic Fleet develops and evaluates surface warfare and logistics doctrine, operational procedures, tactics and equipment and assigns ready forces and logistics support to the operational control of other commanders as directed. The Commander, Naval Surface Force, U.S. Atlantic Fleet exercises operational and administrative control of assigned forces in order to support the objectives of the Atlantic Fleet in peace, limited war, or general war. The organizational relationship of operating force TYCOMs under CINCLANTFLT are illustrated in figure 1-4-5.

- Operational Command
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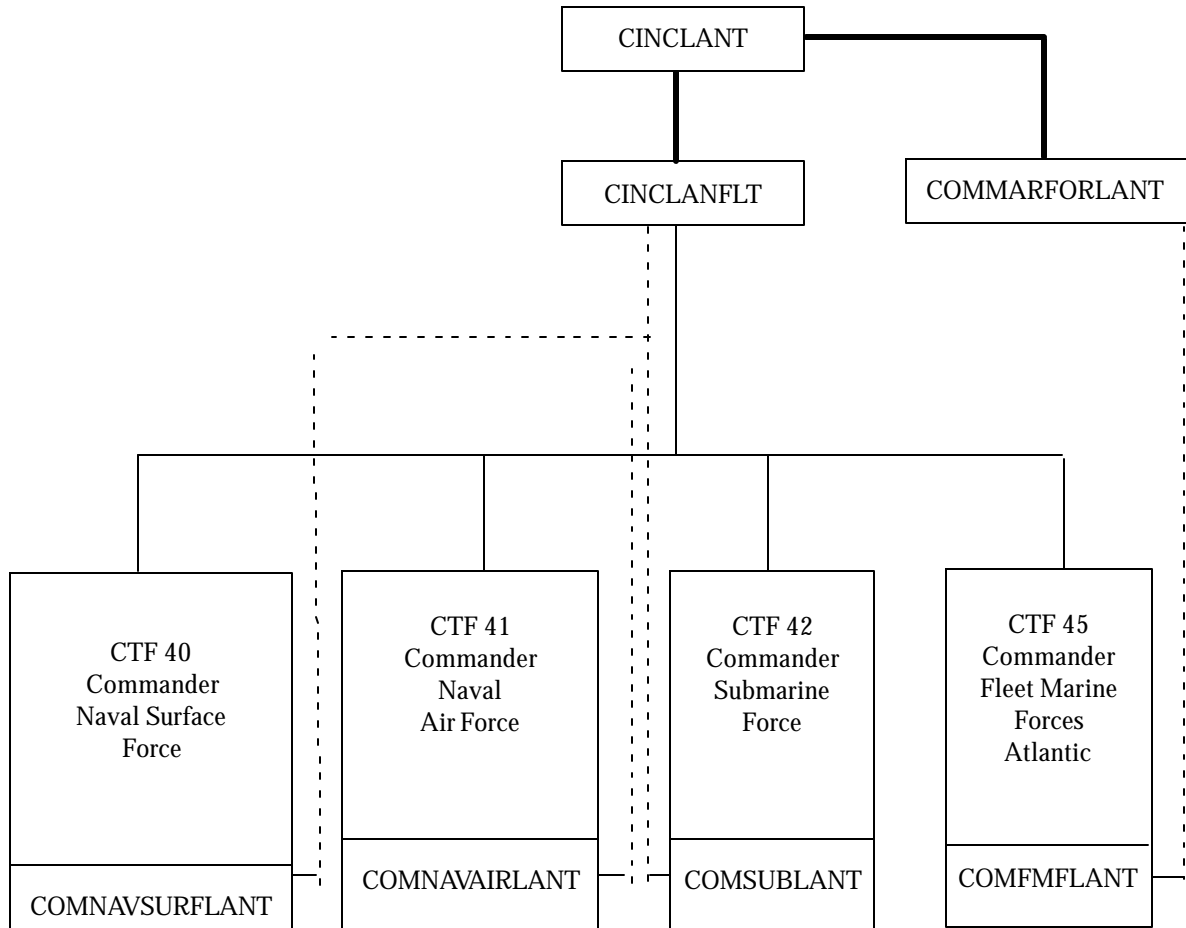


Figure 1-4-5. Organizational Relationships of Operating Forces Type Commands Reporting to CINCLANTFLT

1.4.16 Commander, Naval Air Force, U.S. Atlantic Fleet. The Commander, Naval Air Force, U.S. Atlantic Fleet, under CINCLANTFLT, organizes, trains, equips, prepares and maintains the readiness of and plans the employment in peace and war of forces assigned. The Commander, Naval Air Force, U.S. Atlantic Fleet also provides administrative personnel, material, fiscal, and technological support to those forces in order to most effectively and efficiently support the mission of the U.S. Atlantic Fleet. The organizational relationship of operating force TYCOMs under CINCLANTFLT is illustrated in figure 1-4-5.

1.4.17 Commander, Fleet Marine Forces Atlantic. The Commander, Fleet Marine Forces, Atlantic, under CINCLANTFLT, conducts type training and supports intertype training and material readiness for the conduct of assault operations and the seizure of advanced bases or other types of expeditionary duty. The organizational relationship of operating force TYCOMs under CINCLANTFLT is illustrated in figure 1-4-5.

1.4.18 Commander, Submarine Force, U.S. Atlantic Fleet. The Commander, Submarine Force, U.S. Atlantic Fleet, under CINCLANTFLT, conducts submarine operations in support of CINCLANTFLT to ensure control of the sea in the Atlantic command area. The Commander, Submarine Force, U.S. Atlantic Fleet also provides combat-ready submarine forces to conduct offensive warfare (including antisubmarine warfare), defensive warfare, and other assigned tasks. This responsibility includes training, logistics, and planning support to other Atlantic commands as directed in order to support the objective of the U.S. Atlantic Fleet in peace, limited war, or general war. The organizational relationship of operating force TYCOMs under CINCLANTFLT is illustrated in figure 1-4-5.

1.4.19 Commander, Second Fleet. The Commander, Second Fleet, under CINCLANTFLT, plans for, and when directed, conducts battle force operations in the Atlantic command in support of designated unified or allied commanders. The Commander, Second Fleet directs movements

and exercises operational control of assigned units to carry out scheduled ocean transits and other special operations as directed by CINCLANTFLT in order to maximize fleet operational readiness to respond to contingencies in the Atlantic command area of operations. The Commander, Second Fleet also plans fleet intertype training exercises and participates in joint and combined exercises as directed. The organizational relationship of operating forces reporting to the Commander, Second Fleet is illustrated in figure 1-4-6.

1.4.20 Commander in Chief, U.S. Pacific Fleet. The Commander in Chief, U.S. Pacific Fleet (CINCPACFLT), in peacetime, limited war, and general war, conducts operations to ensure control of the sea and air in the Pacific command area, which includes portions of the Pacific, Atlantic, Arctic, and Indian Oceans and the Bering Sea. CINCPACFLT also provides combat-ready U.S. naval forces (including administrative, logistics, and planning support thereto) to the Pacific command and other commands as directed in order to defend the United States against attack through the Pacific area, to maintain the security of the Pacific command, and to support the operations of adjacent allied and national commanders. The organizational relationship of operating force TYCOMs under CINCPACFLT is illustrated in figure 1-4-7.

1.4.21 Commander, Naval Surface Force, U.S. Pacific Fleet. The Commander, Naval Surface Force, U.S. Pacific Fleet, under CINCPACFLT, commands assigned cruiser-destroyer, amphibious, auxiliary and special warfare forces, and shore activities. The Commander, Naval Surface Force, U.S. Pacific Fleet exercises operational control of such forces not assigned to other commanders as CINCPACFLT may direct. The Commander, Naval Surface Force, U.S. Pacific Fleet also maintains all ships, special forces, and staffs of the force in an optimum state of training, readiness, discipline, and morale in order to maintain the maximum degree of readiness for war. The organizational relationship of operating force TYCOMs under CINCPACFLT are illustrated in figure 1-4-7.

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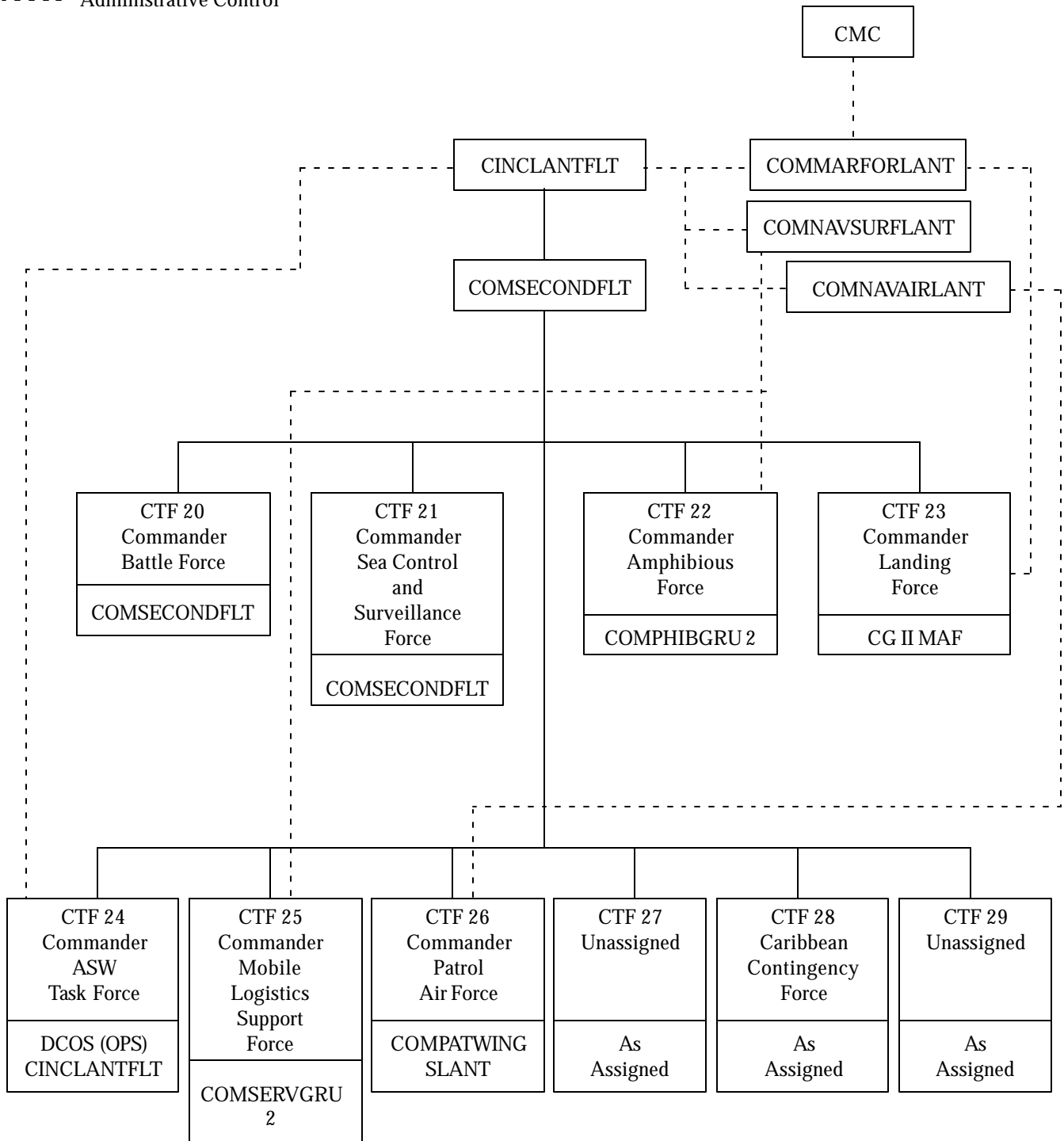


Figure 1-4-6. Organizational Relationships of Operating Forces Reporting to the COMSECONDFLT

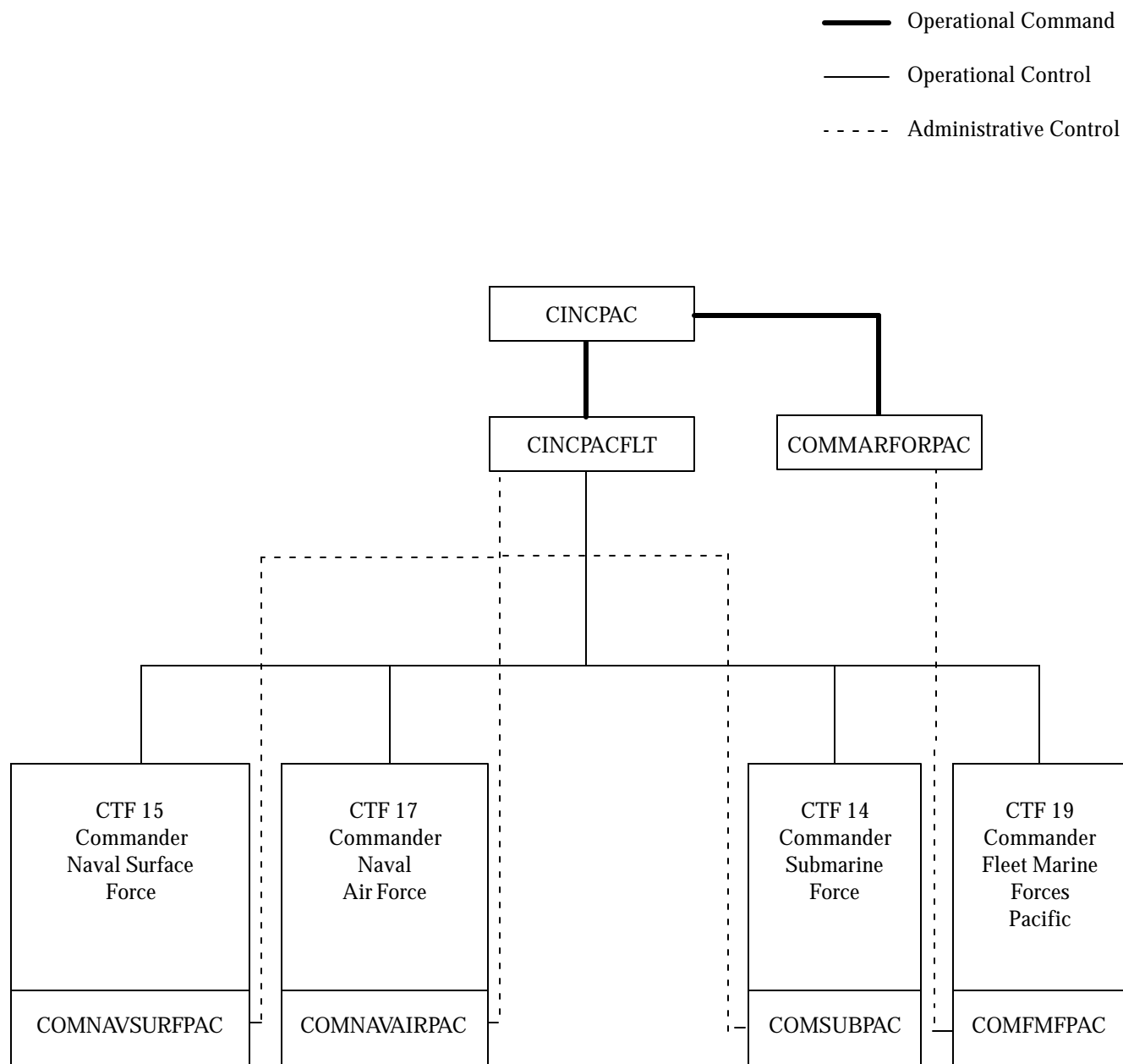


Figure 1-4-7. Organizational Relationships of Operating Forces Type Commands Reporting to CINCPACFLT

1.4.22 Commander, Naval Air Force, U.S. Pacific Fleet.

The Commander, Naval Air Force, U.S. Pacific Fleet, under CINCPACFLT, commands assigned aviation squadrons, aircraft carriers, and shore activities. The Commander, Naval Air Force, U.S. Pacific Fleet exercises operational control of such forces not assigned to other commanders as CINCPACFLT may direct. The Commander, Naval Air Force, U.S. Pacific Fleet also maintains all aircraft, ships, shore activities, and staffs of the force in an optimum state of training, readiness, discipline, and morale in order to maintain the maximum degree of readiness for war. The organizational relationship of operating force TYCOMs under CINCPACFLT are illustrated in figure 1-4-7.

1.4.23 Commander, Fleet Marine Forces Pacific. The Commander, Fleet Marine Forces, Pacific under CINCPACFLT, conducts type training and supports intertype training and material readiness for the conduct of assault operations, the seizure of advanced bases or other types of expeditionary duty. The organizational relationship of operating force TYCOMs under CINCPACFLT are illustrated in figure 1-4-7.

1.4.24 Commander, Submarine Force, U.S. Pacific Fleet. The Commander, Submarine Force, U.S. Pacific Fleet, under CINCPACFLT, commands assigned attack and ballistic missile submarines, ships, and ashore activities. The Commander, Submarine Force, U.S. Pacific Fleet exercises operational control of such forces not assigned to other commanders as CINCPACFLT may direct. The Commander, Submarine Force, U.S. Pacific Fleet maintains all submarines, ships, and shore activities and staffs of the force in an optimum state of training, readiness, discipline, and morale in order to maintain the maximum degree of readiness for war. The organizational relationship of operating force TYCOMs under CINCPACFLT are illustrated in figure 1-4-7.

1.4.25 Commander, Third Fleet. The Commander, Third Fleet, under CINCPACFLT, exercises operational control over assigned ships, aircraft, and submarines. The Commander, Third Fleet also plans, conducts, and evaluates fleet training (including combined, joint, and intertype) and tactical development exercises and conducts operations to ensure control of the sea in order to defend the United States against attack through the eastern Pacific Ocean and the Bering Sea. In addition, the Commander, Third Fleet maintains the security of the Pacific command and supports the operations of adjacent allied and national commanders. The organizational relationship of operating forces report-

ing to the Commander, Third Fleet are illustrated in figure 1-4-8.

1.4.26 Commander, Fifth Fleet. The Commander U. S. Fifth Fleet (COMFIFTHFLT) is subordinate to, and an additional duty of Commander, U. S. Naval Forces Central Command (COMUSNAVCENT) who reports directly to Commander in Chief U. S. Central Command (USCINCCENT) for operational matters, and to the Chief of Naval Operations (CNO) for administrative related matters. The Central Command theater, resides within 25 countries and 7.5 million square miles of Europe, Asia and Africa. Naval forces are forward deployed to this region and have been so since the end of World War II. Naval forces in the region are rotationally deployed from either Pacific Fleet or Atlantic Fleet. Operationally, they are assigned as units of the U. S. FIFTH Fleet, which was recommissioned July 1, 1995.

1.4.27 Commander, Seventh Fleet. The Commander, Seventh Fleet, under CINCPACFLT, exercises operational control over assigned ships, aircraft, and submarines and plans and conducts fleet training (including combined, joint, and intertype) exercises. The Commander, Seventh Fleet conducts operations to ensure control of the sea in order to defend the United States against attack through the western Pacific and Indian Oceans. The Commander, Seventh Fleet also maintains the security of the Pacific command and supports the operations of adjacent allied and national commanders. The organizational relationship of operating forces reporting to the Commander, Seventh Fleet are illustrated in figure 1-4-9.

1.4.28 Commander in Chief, U.S. Naval Forces, Europe. The Commander in Chief, U.S. Naval Forces, Europe (CINCUSNAVEUR) plans, conducts, and supports, when directed, naval operations in the European theater and Middle East area during peacetime, contingencies, and general war to perform tasks assigned by the Commander in Chief, U.S. European Command. The organizational relationship of operating forces under CINCUSNAVEUR are illustrated in figures 1-4-10 and 1-4-11.

1.4.29 Commander, Middle East Force. The Commander, Middle East Force conducts naval operations during peacetime to represent U.S. interests in the Red Sea, Persian Gulf, and northwestern Indian Ocean area during contingencies and general war and performs tasks assigned by CINCUSNAVEUR. The organizational relationship of operational forces reporting to CINCUSNAVEUR are illustrated in figures 1-4-10 and 1-4-11.

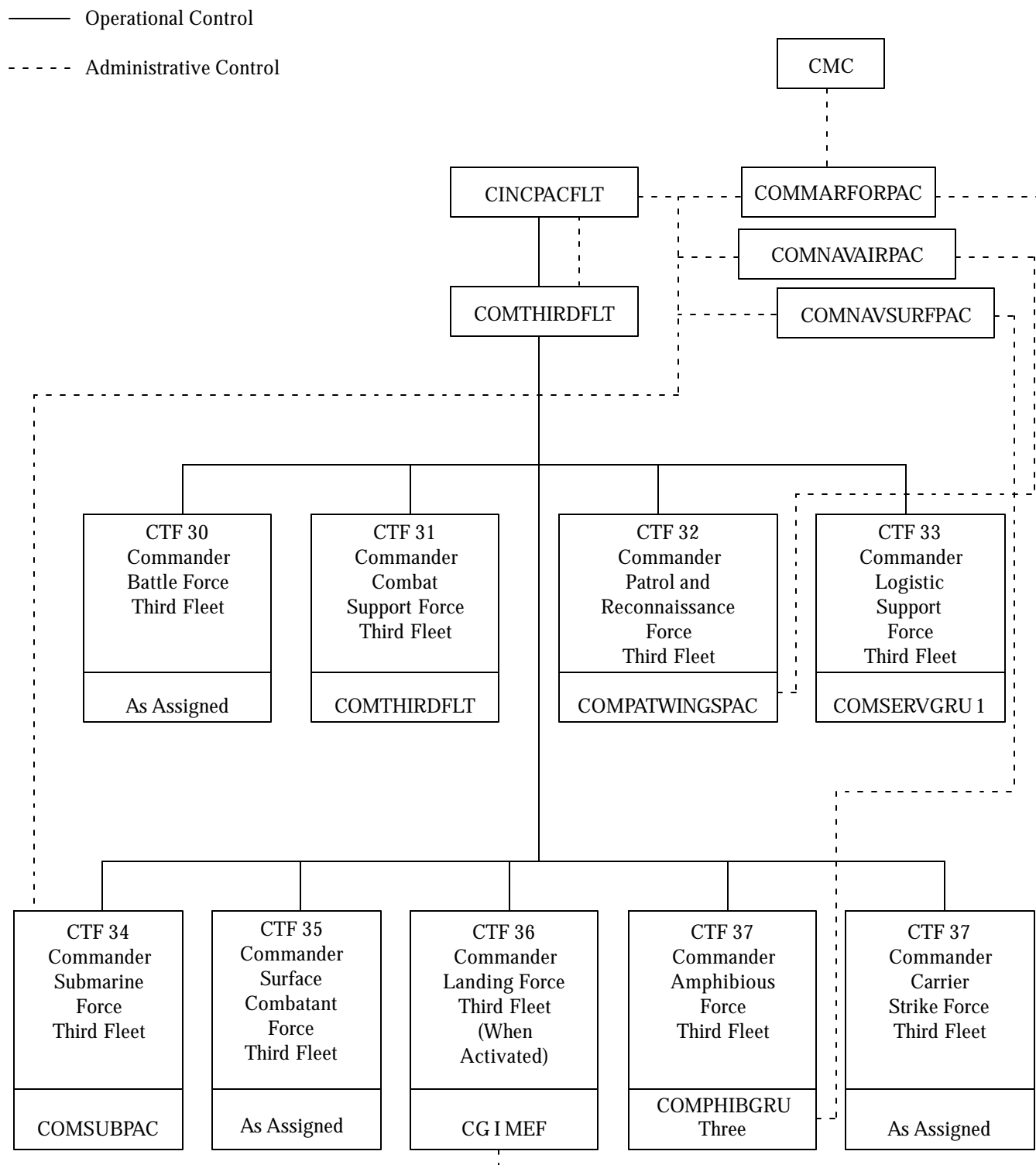


Figure 1-4-8. Organizational Relationships of Operating Forces Reporting to COMTHIRDFLT

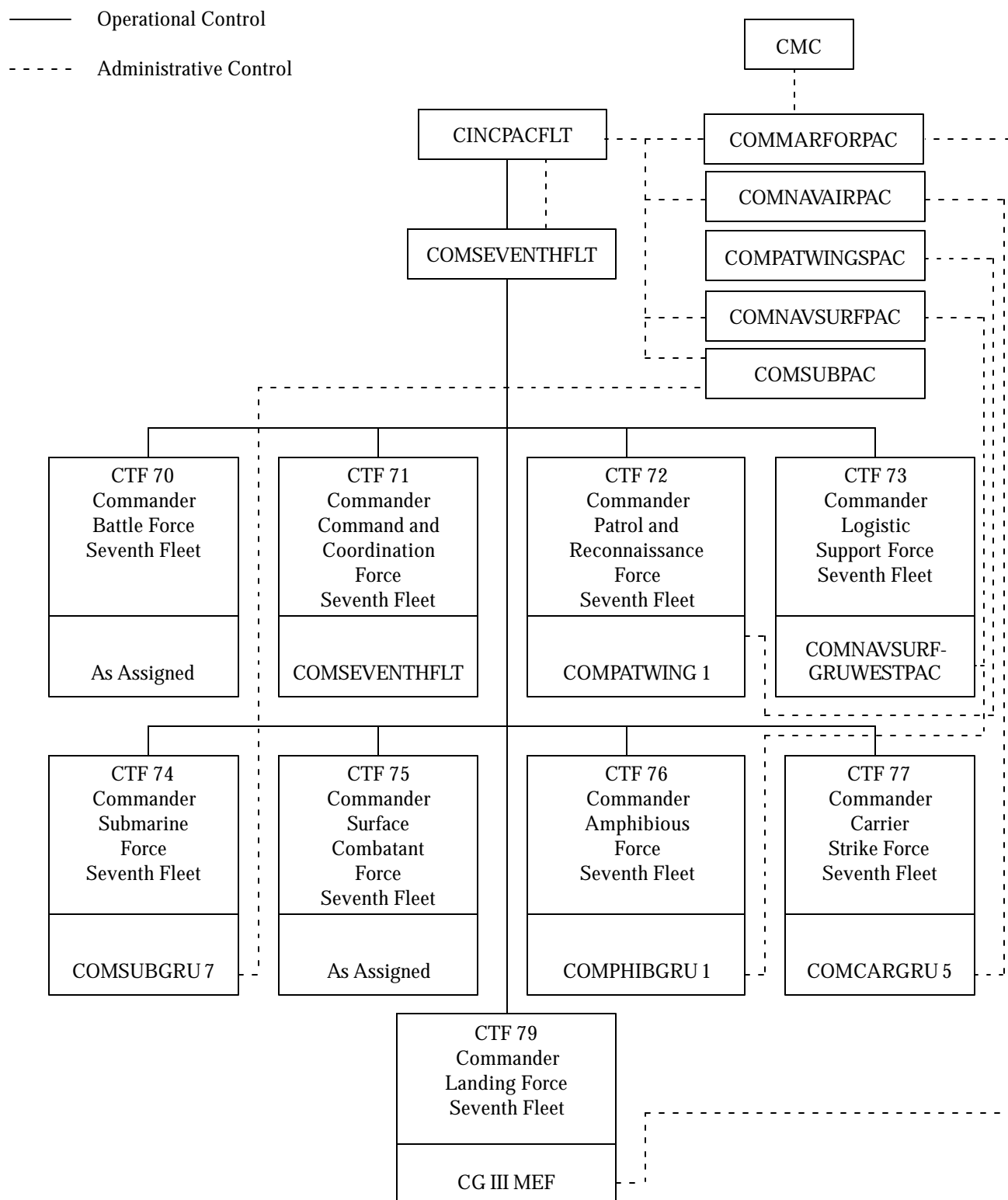


Figure 1-4-9. Organizational Relationships of Operating Forces Reporting to COMSEVENTHFLT

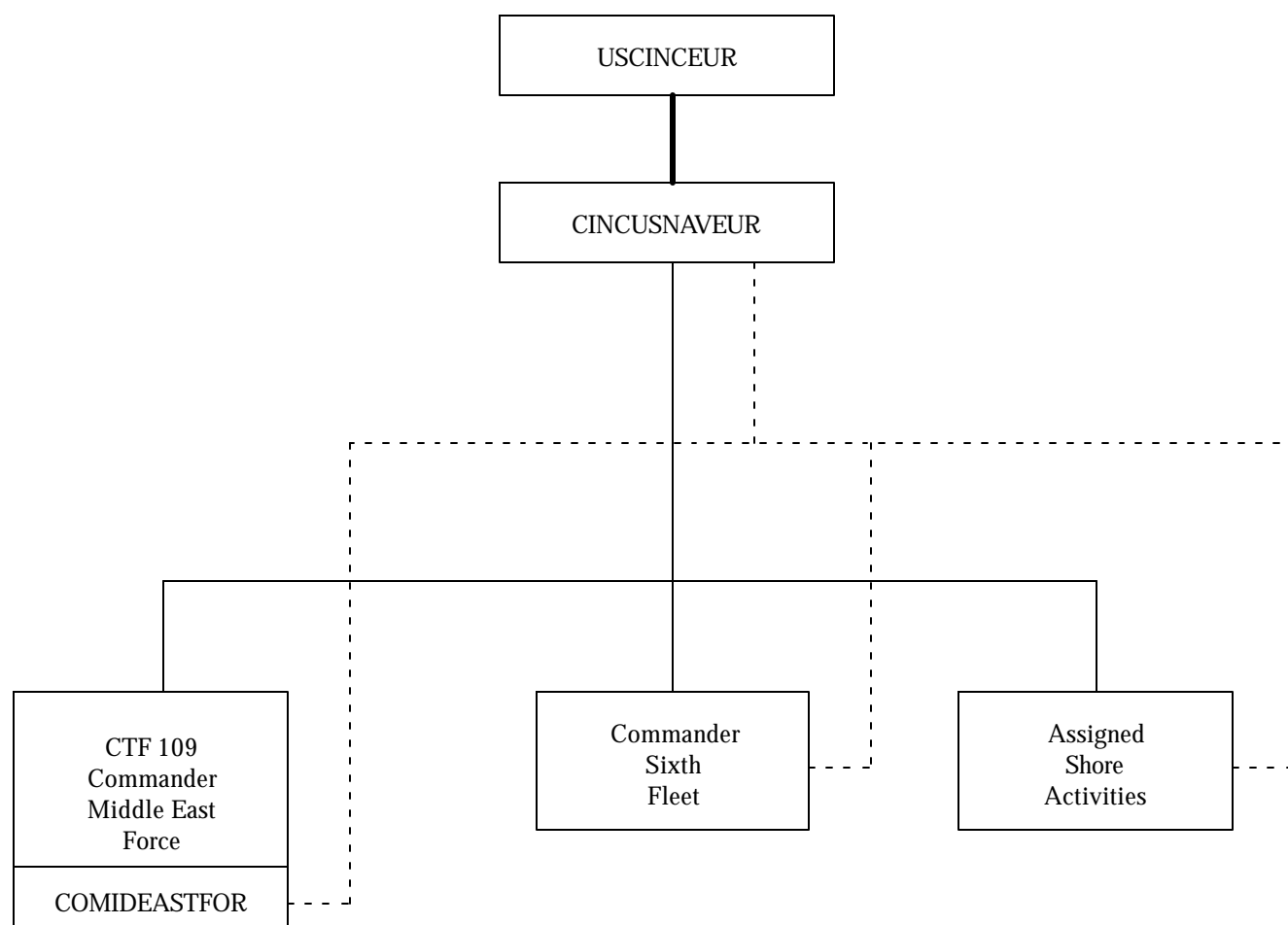
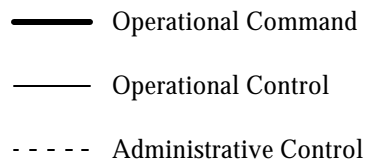


Figure 1-4-10. Organizational Relationships of Operating Forces Reporting to CINCUSNAVEUR

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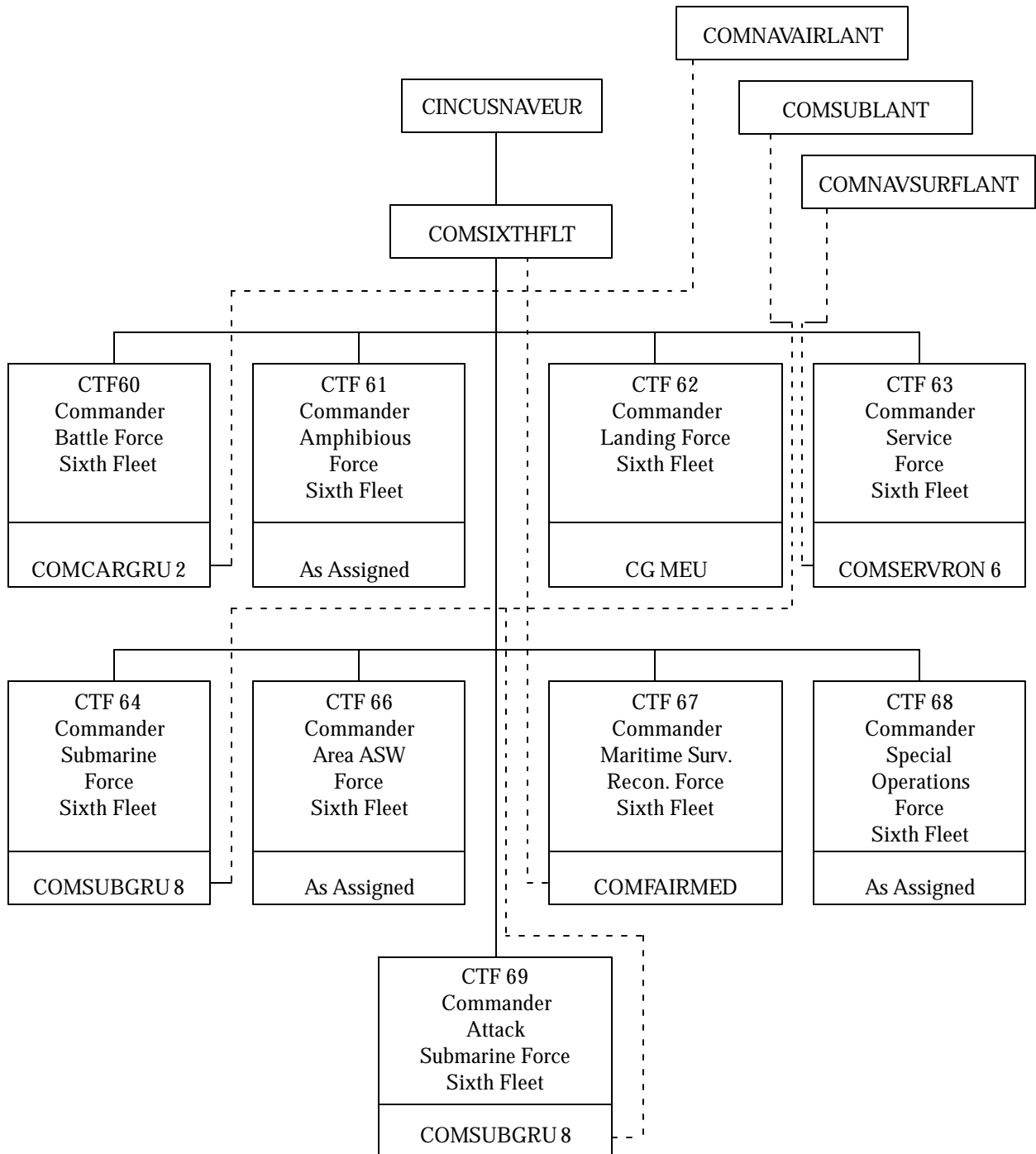


Figure 1-4-11. Organizational Relationships of Operating Forces Reporting to COMSIXTHFLT

1.4.30 Commander, Sixth Fleet. The Commander, Sixth Fleet, under CINCUSNAVEUR, plans for and conducts offensive or defensive naval combat operations when directed by CINCUSNAVEUR or other competent authority in order to establish and maintain control of the waters of, and air space over, the Mediterranean Sea, approaches thereto, adjacent inland areas, and the Black Sea. The Commander, Sixth Fleet plans and conducts contingency operations including evacuation of U.S. citizens; protects U.S. interests when directed by higher authority; provides a U.S. Navy presence in the Mediterranean area in support of U.S. Navy overseas diplomacy objectives and U.S. foreign policy; and carries out training operations to maintain fleet readiness to carry out wartime, contingency, and peacetime responsibilities. The organizational relationship of operating forces reporting to CINCUSNAVEUR are illustrated in figures 1-4-10 and 1-4-11.

1.4.31 Commander, Naval Reserve Force. The Commander, Naval Reserve Force (COMNAVRESFOR) administers the Naval Reserve Program, including management of naval reserve resources; and performs such other functions or tasks as may be directed by CNO. The organizational relationship of shore activities under COMNAVRESFOR are illustrated in figure 1-4-12.

1.4.32 Commander, Naval Air Reserve Force. The Commander, Naval Air Reserve Force (COMNAVAIRESFOR) commands the Naval Air Reserve Force in peacetime so as to maintain the assigned personnel and aircraft in a state of training, readiness, and availability which will permit rapid deployment in the event of full or partial mobilization.

1.4.33 Naval Air Stations and Naval Air Facilities. The commanding officers of naval air stations and naval air facilities, under COMNAVAIRESFOR, command assigned selected reserve units and direct their prescribed programs to assure mobilization readiness; act as field managers for assigned resources; and provide required support to COMNAVRESFOR staffs and squadrons.

1.4.34 Naval Air Reserve Units. The commanding officers of Naval Air Reserve Units, under COMNAV-

AIRESFOR, command assigned selected reserve units and direct their prescribed programs to assure mobilization readiness; act as field managers for assigned resources; and provide required support to COMNAVRESFOR staffs and squadrons.

1.4.35 Commander, Fleet Logistic Support Wing. The Commander, Fleet Logistic Support Wing, under COMNAVAIRESFOR, directs and coordinates the operations and training of assigned squadrons to achieve and sustain a level of readiness and provides logistics support to fleet commanders upon mobilization. In peace time, squadrons perform all of the Navy's Continental United States air logistics support including overseas deployments of short durations.

1.4.36 Commander, Reserve Patrol Wing. The Commander, Reserve Patrol Wing, under COMNAVAIRESFOR, supervises the administration, logistics, and training (including procedures relating to operations as well as maintenance) of all Atlantic and Pacific Fleet shore-based reserve antisubmarine aviation units to ensure the combat readiness of those units, permitting rapid deployment in the event of full or partial mobilization.

1.4.37 Commander, Carrier Air Wing Reserve, Twenty. The Commander, Carrier Air Wing Reserve, Twenty, under COMNAVAIRESFOR, supervises the administration, logistics, and training (including procedures relating to operations as well as maintenance) of assigned squadrons to sustain a level of personnel and equipment readiness which will ensure the combat readiness of those units, permitting rapid deployment in the event of full or partial mobilization.

1.4.38 Commander, Helicopter Wing Reserve. The Commander, Helicopter Wing Reserve, under COMNAVAIRESFOR, directs, supervises, and coordinates the training of assigned squadrons and detachment personnel to maintain the maximum combat readiness level which will ensure the rapid deployment of the helicopter wing or individual squadrons in the event of full or partial mobilization.

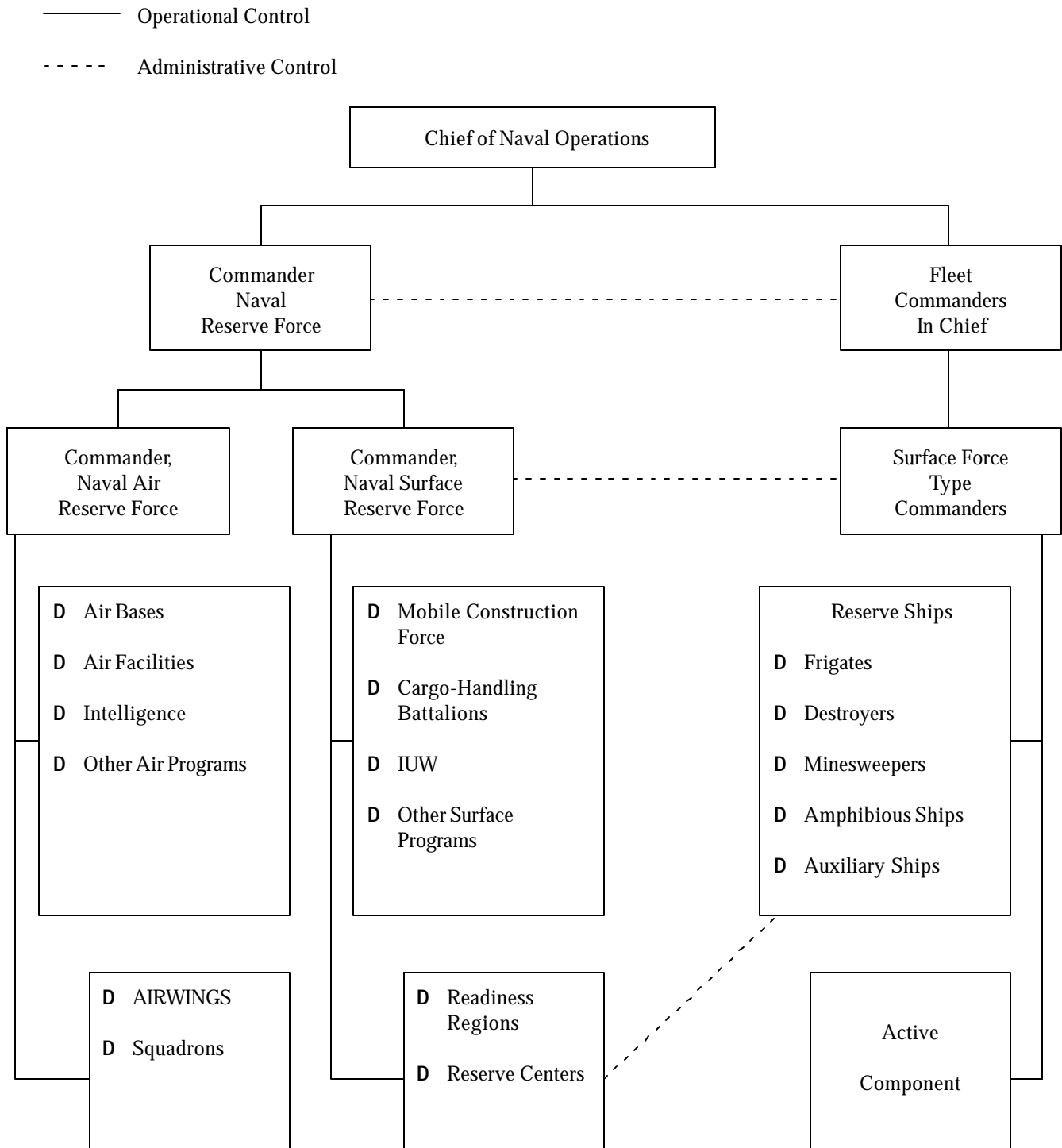


Figure 1-4-12. Organizational Structure of Naval Reserve

1.4.39 Commander, Naval Surface Reserve Force.

1.4.39.1 The Commander, Naval Surface Reserve Force (COMNAVSURFRESFOR), under COMNAVRESFOR, commands the naval surface reserve force in peacetime so as to maintain assigned reserve personnel to reserve ships and reserve personnel in a state of training, readiness, and availability which will permit rapid deployment in the event of full or partial mobilization. A unique relationship between naval reserve ship, readiness region commanders and reserve centers is depicted by the dotted lines in figure 1-4-12. Although commanding officers of naval reserve ships shoulder the responsibility for the training and retention of selected reserve augment crews assigned to their ships, reserve centers supporting the ship's homeport must provide selected reserve crew manning. Appropriate readiness region commanders coordinate their manning efforts.

1.4.39.2 The relationship between COMNAVRESFOR and the two fleet commanders is illustrated by a dashed line in figure 1-4-12, COMNAVRESFOR to both CINCLANTFLT and CINCPACFLT on an additional duty basis.

1.4.39.3 Operational and administrative control of naval reserve ships is exercised by the Atlantic and Pacific Fleet commanders. These ships are manned by active duty and selected reserve personnel.

1.4.40 Naval Reserve Readiness Command Regions. The Commander of Naval Reserve Readiness Command Regions, under COMNAVSURFRESFOR, commands assigned naval reserve units and directs their prescribed programs to assure mobilization readiness, and acts as a field manager for assigned resources.

1.4.41 Navy Cargo Handling and Port Group. The Navy Cargo Handling and Port Group, under CINCLANTFLT, has the primary mission of providing cargo handling training to all Navy cargo handling force personnel as well as Marine Corps and fleet personnel. The secondary mission is to offload a Maritime Prepositioning Ship squadron in a contingency.

1.4.42 Inshore Undersea Warfare. The inshore undersea warfare and their mobile inshore undersea warfare units, under COMNAVSURFRESFOR, provide surface and subsurface surveillance for protection of amphibious objective areas, harbors and approaches, roadsteads, straits, anchorages, offshore economic assets, and other military significant inshore areas throughout the world.

1.4.43 Naval Reserve Intelligence Program. The Naval Reserve Intelligence Program provides a mobilization ready intelligence capability to the active forces. These units are closely tied to active intelligence forces and provide nearly one third of fleet intelligence center output.

1.4.44 Shore Establishment. The shore establishment is comprised of shore activities with defined missions approved for establishment by the SECNAV. The function of the shore establishment is to supply, maintain, and support the operating forces through the furnishing of required materials, services, and personnel. Command relationships and the exercise of command and support responsibilities for Navy and Marine Corps shore activities are contained in SECNAVINST 5400.14A (NOTAL) and are not affected by this manual. The organizational relationship of system commands under CNO are illustrated in figure 1-4-13.

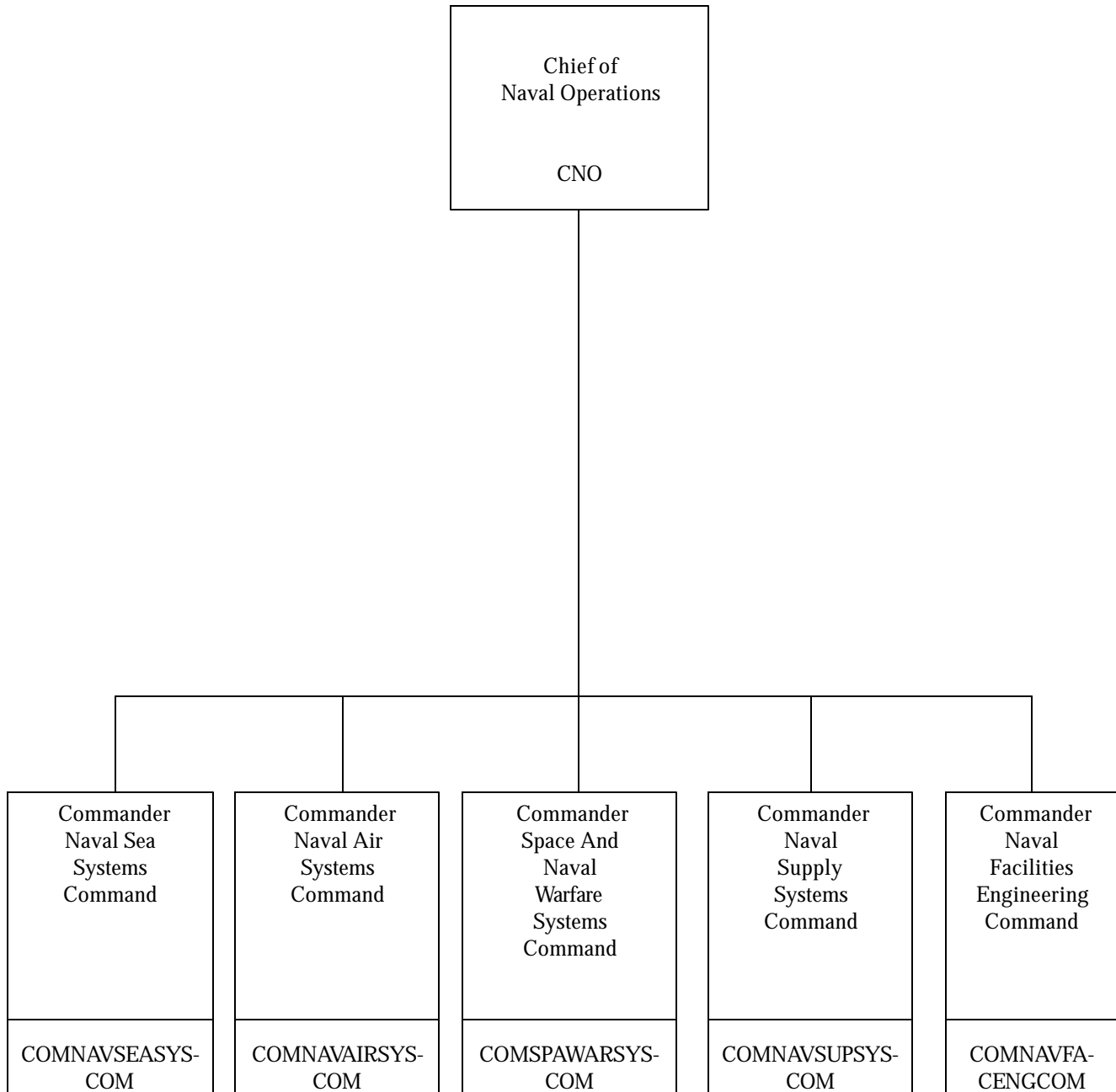


Figure 1-4-13. Organizational Relationships of System Commands Under CNO

1.4.45 Naval Air Systems Command. The Naval Air Systems Command (COMNAVAIRSYSCOM) is responsible for the research, design, development, test, acquisition, quality evaluation, and logistics support for all aviation procurements relating to Navy and Marine Corps aircraft, ordnance, aerial targets and other aviation related equipment, and associated material. In addition, COMNAVAIRSYSCOM is responsible for mission planning, facility requirements development, workload planning, internal organization and procedures, budgeting, funding, accounting, staffing, and the utilization of personnel, funds, materials, and facilities. The organizational relationship of support activities under COMNAVAIRSYSCOM are illustrated in figure 1-4-14. COMNAVAIRSYSCOM, under the direction of CNO, is the coordinating authority for the Naval Ordnance Maintenance Management Program (NOMMP). COMNAVAIRSYSCOM (AIR-3.1), as coordinating authority, is responsible to:

- a. Provide ordnance maintenance policy guidance, procedures, technical direction, and management review of the program at each level of maintenance (organizational, intermediate, depot).
- b. Provide technical direction for the manufacture, modification, repair, overhaul, material effectiveness, disposition and salvage of ordnance and associated material and equipment.
- c. Provide ordnance maintenance processing documents in sufficient scope and depth to clearly delineate the maintenance functions and organizations responsible for performing them.
- d. Assist in the development of an effective training program for military and civilian personnel in the ordnance community.
- e. Provide ordnance maintenance material allowance lists.
- f. Direct the maintenance data system.
- g. Recommend procedural changes, methods, and technical guidance to effect continuing improvement in the NOMMP.
- h. Provide technical direction and a centralized system for the control and issuance of all technical directives concerning ordnance and associated material.
- i. Maintain inventory management control of ordnance, major air launched missile components and all-up-rounds.

1.4.46 Naval Sea Systems Command. The Naval Sea Systems Command (COMNAVSEASYSYSCOM) is responsible for the research, development, procurement, and logistics support, and other material functions relating to whole ships and craft, shipboard weapon systems, expendable ordnance, such as air launched mines and torpedoes, and shipboard systems and components such as propulsion, power generating, sonar, search radar, and auxiliary equipment. COMNAVSEASYSYSCOM is also responsible for ship system integration and for coordination of logistics support for ships as a whole. COMNAVSEASYSYSCOM has central authority for ship and nuclear power safety; for explosives, propellants, and actuating components; and for explosive safety and explosive ordnance disposal. In addition, COMNAVSEASYSYSCOM is responsible to ensure that adequate intermediate maintenance facilities and personnel are available to accomplish programs under the tasking and direction of COMNAVAIRSYSCOM. The organizational relationships of support activities under COMNAVSEASYSYSCOM are listed in figure 1-4-15. COMNAVSEASYSYSCOM field activities perform the following functions for COMNAVAIRSYSCOM in support of the NOMMP:

- a. Receive, inspect, segregate, store, issue and ship ammunition, explosives, expendable ordnance items and/or ordnance as specified in assigned missions and tasks.
- b. Maintain and rework ordnance as tasked and directed by COMNAVAIRSYSCOM.
- c. Assemble, disassemble, modify, and perform tests on ordnance.
- d. Perform surveillance and quality evaluation of ordnance and calibration of COMNAVAIRSYSCOM test equipment.
- e. Report maintenance data via the applicable maintenance data collection system.
- f. Submit information via transaction item reporting and Serialized Lot Item Tracking to the Conventional Ammunition Integrated Management System to maintain the inventory data base.
- g. Exercise general supervision of the explosive safety program.
- h. Provide technical direction for the Navy insensitive munitions program. Provide technical direction for Navy explosive handling and transportation requirements. Provide overall management of the Navy arms, ammunition, and explosives security program.

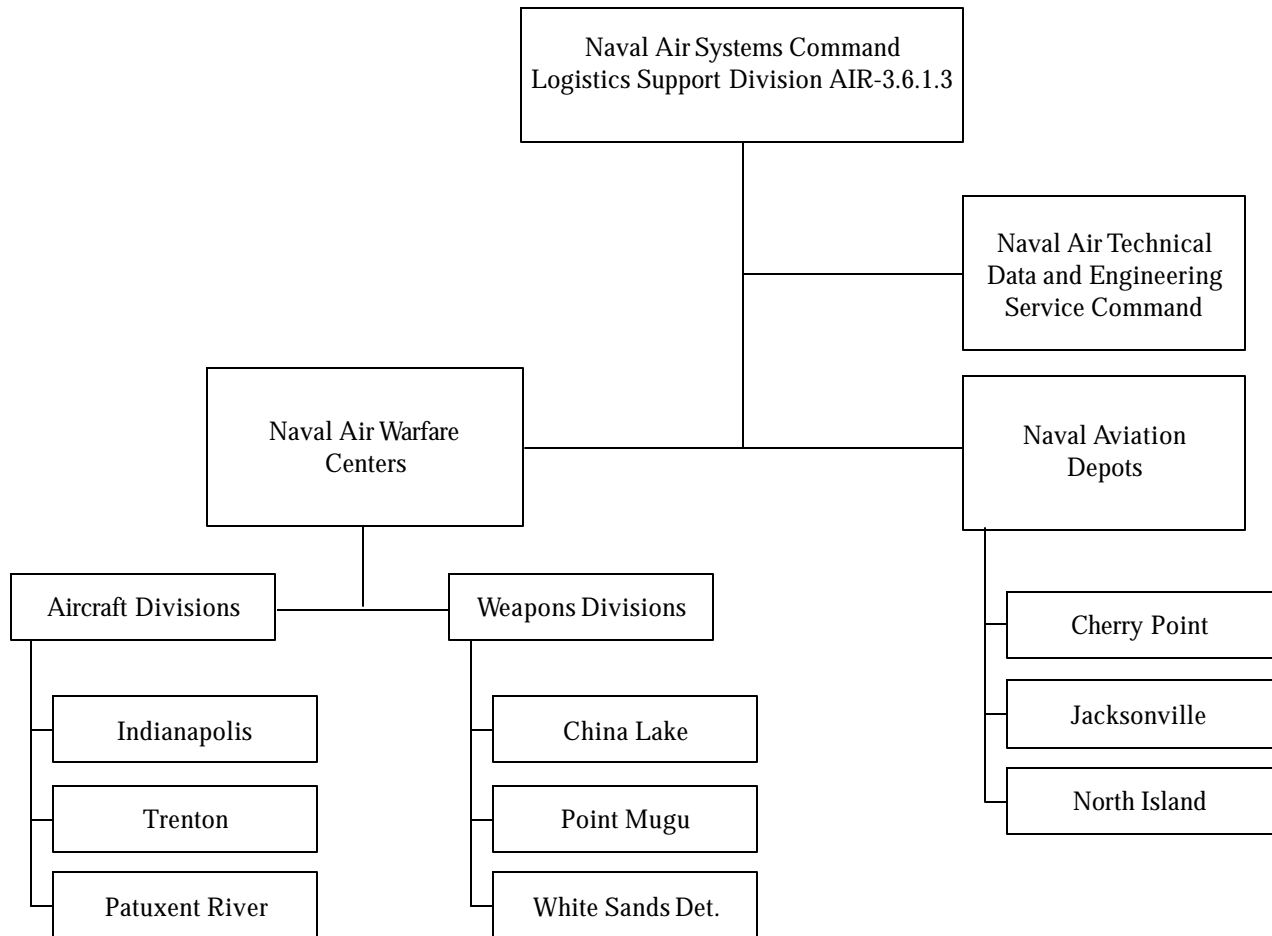


Figure 1-4-14. Organizational Relationships of Support Activities Under COMNAVAIRSYSCOM

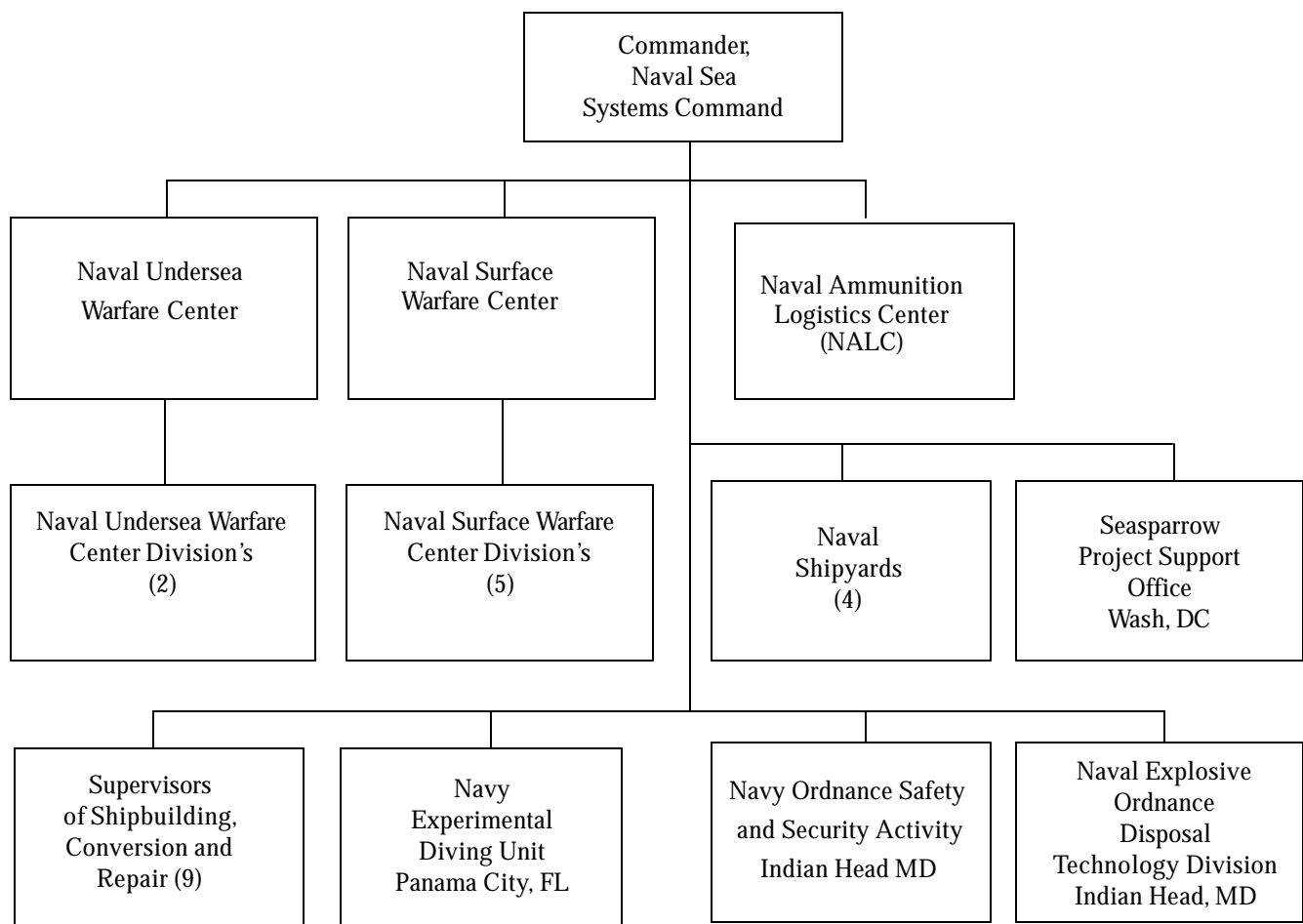


Figure 1-4-15. Organizational Relationships of Support Activities Under COMNAVSEASYS

1.4.47 Naval Supply Systems Command. The Naval Supply Systems Command (COMNAVSUPSYSCOM) is responsible for developing supply management policies and methods and for administering the naval supply system. COMNAVSUPSYSCOM also provides material support for material handling, food service equipment and special clothing; manages the Navy stock fund; provides accounting support to Navy activities as assigned; and is responsible for transportation of Navy property. The organizational relationship of support activities under NAVSUPSYSCOM are listed in figure 1-4-16. In addition, NAVSUPSYSCOM functions as program manager for the Conventional Ammunition Integrated Management System. NAVSUPSYSCOM field activities perform the following functions for NAVAIRSYSCOM in support of the NOMMP:

- a. Procurement of ordnance material directly from industry or other government agencies.
- b. Allocation of NAVAIRSYSCOM procured materials to stock points.
- c. Distribution of ordnance materials to fill replenishment stock requirements.
- d. Referral of requisitions to stock points to meet end use requirements.
- e. Initiation of disposal actions for materials that are in excess of system requirements.
- f. Maintenance of ordnance material spares and spare parts catalogs.
- g. Determination of repairable ordnance material secondary item rework requirements.
- h. Development, issuance and updating of initial-out fitting allowances applicable to ordnance material.
- i. Management of program support inventory control point activities for air launched missile programs.
- j. Maintenance of the Conventional Ammunition Integrated Management System.
- k. Development of allowance parts lists and coordinated shipboard allowance lists/coordinated shore base allowance list for airborne weapon material.

1.4.48 Naval Air Warfare Center Weapons Division, Point Mugu CA. The Naval Air Warfare Center Weapons Division, Point Mugu, CA (NAVAIRWARCENWPNDIV) performs development, test and evaluation, development

support, and follow-on engineering, logistics, and training support for naval ordnance, weapons systems, weapons launchers, targets unmanned air vehicles and related devices, and provides major range, technical, and base support for fleet users and other Department of Defense and government agencies. NAVAIRWARCENWPNDIV, Point Mugu is designated as the maintenance engineering activity for air launched missiles, except WALLEYE, and other designated ordnance and related support equipment. As such, NAVAIRWARCENWPNDIV, Point Mugu, CA supports NAVAIRSYSCOM in basic design and maintenance engineering, and production support functions. NAVAIRWARCENWPNDIV, Point Mugu, CA provides the operational forces with engineering and technical services to provide advice, instruction, and training in the installation, operation, maintenance, and modification of ordnance and associated weapons support equipment. NAVAIRWARCENWPNDIV Point Mugu, CA is responsible for development, verification, and maintenance of required documentation for loading, unloading, handling, check/test, release control, transport, and arm/dearm of all conventional ordnance and stores. NAVAIRWARCENWPNDIV Point Mugu, CA is the cognizant maintenance engineering activity (CMEA) designated by NAVAIRSYSCOM for ordnance and related electronic components. NAVAIRWARCENWPNDIV, Point Mugu, CA processes Quality Deficiency Reports (QDR) and engineering investigation requests and administers the ordnance Corrective Action Program in accordance with this instruction performs the air launched missile workload coordination function; and conducts ordnance logistics reviews of depot level industrial facilities. NAVAIRWARCENWPNDIV, Point Mugu, CA supports the air launched weapons industrial standards program development and implementation effort. In addition, NAVAIRWARCENWPNDIV, Point Mugu, CA (Code-361100E) performs the following functions in support of the NOMMP:

- a. Provides support to maintain and update the NOMMP instruction.
- b. Develops changes and revisions as directed by the NOMMP Policy and Working Sub-Committees.
- c. Integrates changes and revisions into the NOMMP manual after review and approval.
- d. Maintains change records and control.
- e. Maintains a current distribution list for NOMMP manuals.
- f. Provides support for annual NOMMP Working and Policy Sub-Committee meetings.

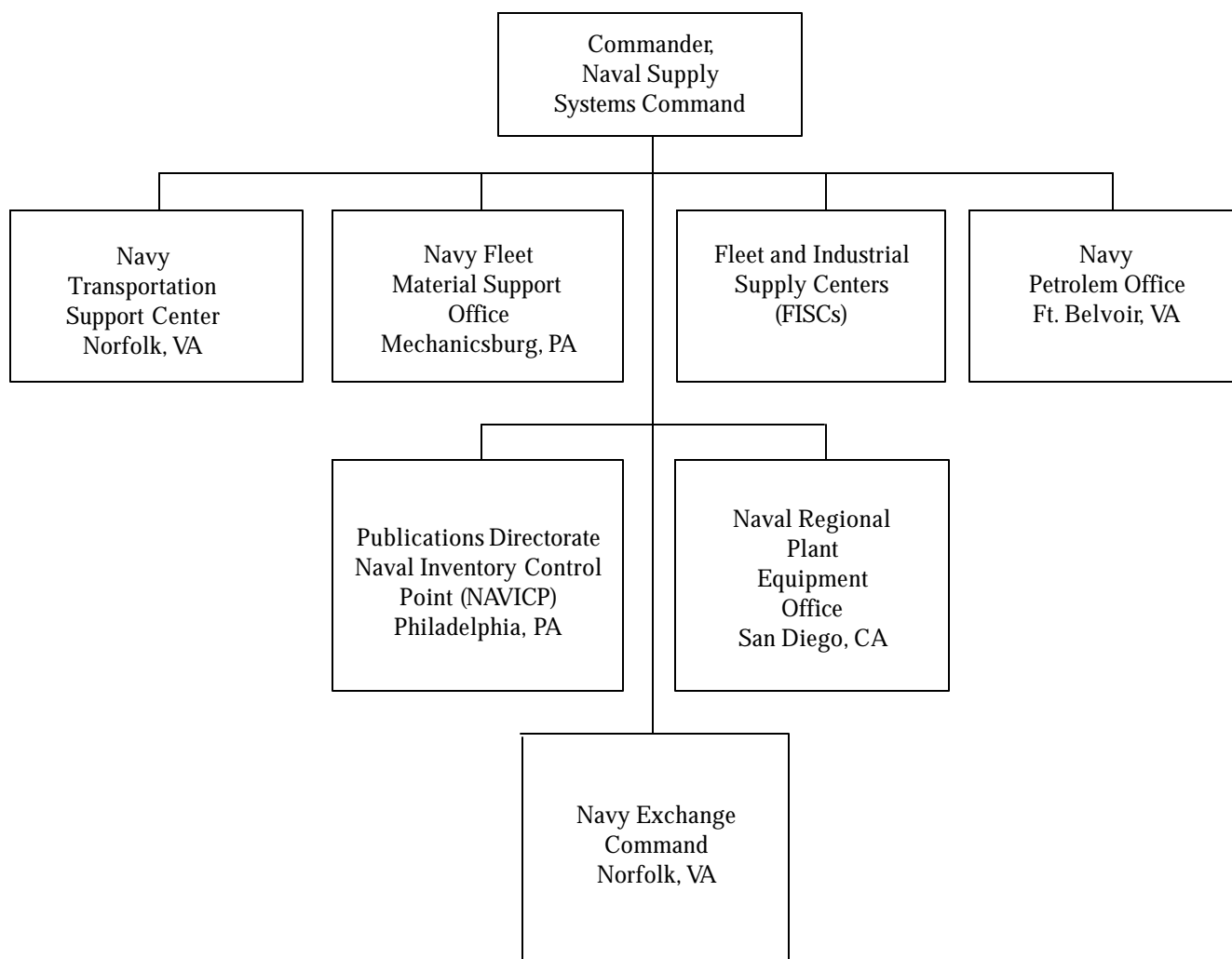


Figure 1-4-16. Organizational Relationships of Support Activities Under COMNAVSUPSYSCOM

g. Prepares and distributes announcement letters, and prepares agenda and agenda support packages.

h. Provides support, as necessary, to the sponsor and committee members to ensure a coordinated effort in support of the NOMMP change process.

i. Publishes and distributes the NOMMP manual after incorporation of approved changes.

1.4.49 Naval Air Warfare Center Weapons Division, China Lake, CA. The Naval Air Warfare Center Weapons Division, China Lake, CA is the principal Navy Research, Development, Test and Evaluation (RDT&E) center for air warfare systems (except antisubmarine warfare systems) and missile weapon systems. The Naval Air Warfare Center Weapons Division, China Lake, CA is the lead development agency for air launched missile acquisition and other selected ordnance. As such, the Naval Air Warfare Center Weapons Division, China Lake, CA works closely with air launched missile prime contractors and supporting Navy field activities and has the responsibility for coordinating matters affecting logistics support during the acquisition phase.

1.4.50 Naval Surface Warfare Center Dahlgren, VA. The Naval Surface Warfare Center Dahlgren, VA, is the principal Navy RDT&E center for surface ship weapon systems, ordnance, mines, and strategic systems support. The Naval Surface Warfare Center Dahlgren has certain responsibilities for selected air delivered chemical weapons and associated support systems.

1.4.51 Naval Ordnance Test Unit Cape Canaveral, FL. The Naval Ordnance Test Unit sponsors Navy range users and Navy contractors in the conduct of tests and collection of data on missiles and other ordnance equipment at the Air Force Eastern Test Range. When requested, the Naval Ordnance Test Unit evaluates tests performed, and provides technical control and direction for Navy programs.

1.4.52 Naval Plant Representative Office. The Naval Plant Representative Office acts as technical representative and contracting officer for the appropriate systems command in all matters relating to administration of contracts to the extent authorized by appropriate authority.

1.4.53 Raytheon Technical Services Company Indianapolis, IN. The Raytheon Technical Services Company Indianapolis, IN. conducts research, development, engineering, material acquisition, pilot and limited manufacturing, technical evaluation, depot maintenance, and integrated logistics support on assigned airborne electronics (avionics), missile, spaceborne, undersea and surface weapon systems and related equipment; and performs such functions and tasks as directed by NAVAIRSYSCOM. The Raytheon Technical Services Company Indianapolis, IN. industrial plant which performs depot level maintenance on designated airborne weapon components and produces electronic components as tasked. The Raytheon Technical Services Company Indianapolis, IN. is also the maintenance engineering activity for the WALLEYE guided weapon.

1.4.54 Naval Air Warfare Center Aircraft Division, Patuxent River, MD. The Naval Air Warfare Center Aircraft Division, Patuxent River, MD conducts tests and evaluation of aircraft weapon systems and their components. The Naval Air Warfare Center Aircraft Division, Patuxent River, MD has absorbed the RDT&E responsibilities and programs previously located at the Naval Air Warfare Center Aircraft Division, Warminster, PA. All Radio-Frequency (RF), (Passive and Active) airborne expendable countermeasure programs (Chaff, GEN-X and POET) now reside at Naval Air Warfare Center Aircraft Division, Patuxent River, MD. See figure 1-4-17 for program points of contact.

1.4.55 Naval Safety Center. The Naval Safety Center collects and evaluates information pertaining to safety hazards, publishes statistical data concerning accidents, maintains a repository for accident and hazard reports, and maintains direct liaison with all levels of command within the Navy and other government and private agencies engaged in hazard awareness work and other aspects of the Department of the Navy Safety Program in order to advise and assist the CNO in promoting and monitoring safety and the prevention of accidents. The Naval Safety Center also initiates and conducts informal investigations into all phases of safety in order to develop recommendations for the formulation of safety policy necessary to maintain the highest practical level of combat readiness.

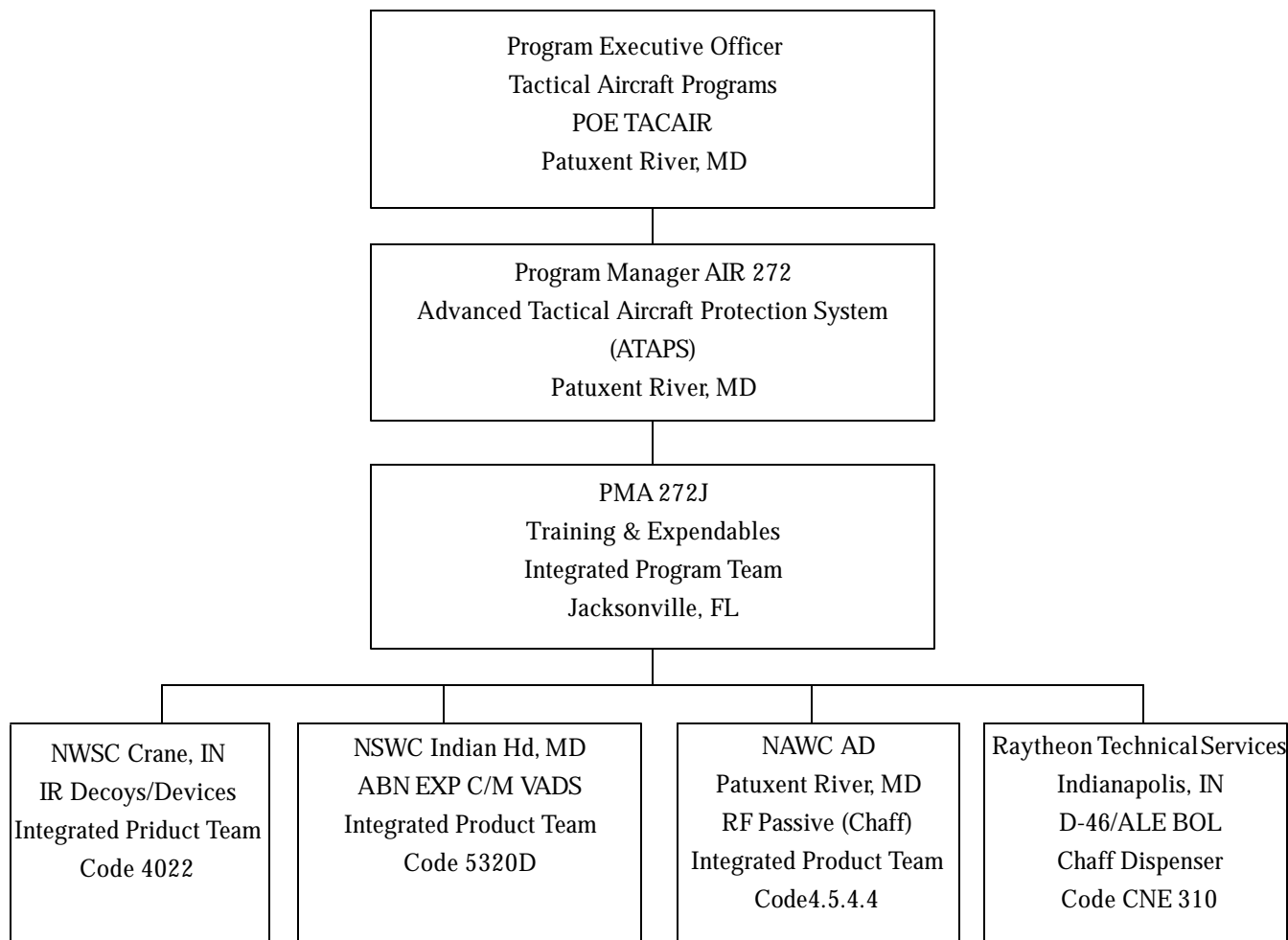


Figure 1-4-17. AIRBORNE EXPENDABLE COUNTERMEASURES ORGANIZATIONAL & INTEGRATED PRODUCT TEAMS

1.4.56 Commander Naval Air Systems Command (Code AIR-3.6.1). The COMNAVAIRSYSCOM (AIR-3.6.1) coordinates aviation fleet maintenance support to ensure optimum aviation maintenance performance and fleet readiness and to provide technical support in aviation life cycle logistics and maintenance planning.

1.4.57 Naval Aviation Depots. Naval aviation depots maintain and operate facilities for, and perform a complete range of depot level rework operations on designated weapon systems, accessories, equipments, manufacture parts and assemblies as required. Naval aviation depots provide engineering services in the development of changes to hardware design; and furnish technical and other professional services on aircraft maintenance and logistic problems. Upon specific request or assignment, naval aviation depots perform other levels of aircraft maintenance for eligible activities. Naval aviation depots are industrial activities under COMNAVAIRSYSCOM and are responsible for the performance of depot maintenance on designated ordnance (non-explosive items only) and for providing engineering, technical, and customer service support.

1.4.58 Naval Air Technical Data and Engineering Service Command. provides technical services in the development, preparation, publication, and distribution of aeronautical technical and maintenance management information to designated naval and service-wide activities. The Naval Air Technical Data and Engineering Command exercises technical guidance of systems of reproduction and distribution for specified engineering design data. The Naval Air Technical Data and Engineering Command provides field engineering assistance and instruction to naval aviation activities in the installation, maintenance, repair and operation of all types of aviation systems and equipment.

1.4.59 Weapons Stations. Weapons Stations provide material and technical support for ammunition, weapons, and weapon systems; maintain and operate explosive ordnance outloading or transshipment facilities; and provide home-port services to fleet ammunition or other support ships. Weapons Stations are FLTCINC industrial maintenance facilities and perform depot level maintenance functions on designated ordnance. FLTCINC's are responsible for the coordination and assignment of workload for the naval weapons stations.

1.4.60 Naval Surface Warfare Center Division, Crane, IN. The Naval Surface Warfare Center Division, Crane, IN provides material, technical, and logistics support to the Navy for ship's and aircraft equipments, shipboard weapon and combat systems, and assigned surface and air expendable and nonexpendable ordnance items. NAVSURFWAR-CENDIV Crane IN is the cognizant field activity designated by NAVAIRSYSCOM to administer and perform weapons

quality engineering functions for ordnance energetic components is a COMNAVSEASYSYSCOM industrial facility which performs depot maintenance for explosives by NAV-AIRSYSCOM, NAVAIRWARCENWPNDIV, Point Mugu, and Naval Ammunition Logistics Center (NALC) Inventory Management Systems Division (NALC IMSD) Mechanicsburg PA direction.

1.4.61 Fleet and Industrial Supply Centers. Centers provide supply and support services to fleet units and shore activities, as assigned, and perform such other functions as may be directed by COMNAVSUPSYSCOM.

1.4.62 Naval Undersea Warfare Center, Keyport Division. The Naval Undersea Warfare Center, Keyport Division proofs, tests, and evaluates underwater weapons and components; exercises design cognizance of underwater acoustic ranges and range equipment; provides material, engineering, and technical support for assigned weapon systems, weapons, or components; and performs additional tasks as directed by NAVSEASYSYSCOM.

1.4.63 Naval Magazines. Naval magazines are fleet activities whose responsibilities include weapons receipt, storage, packaging and unpackaging, renovation, and issue.

1.4.64 Naval Ammunition Logistics Center (NAVAMMOLOGCEN and/or NALC) Mechanicsburg PA Is the inventory manager for all Navy and Marine Corps aviation ordnance material. NALC provides ordnance logistics support and maintains stockpile management information in a distributed and fully integrated information system. NALC functions include:

- a. Tracking of all Navy Arms, Ammunition, and Explosives moving in the public domain.
- b. Cataloging and technical data management for all Naval ordnance and Marine Corps aviation ordnance.
- c. Management of the Notice of Ammunition Reclassification (NAR) ordnance suspension/restriction program.
- d. Management of the ordnance load plan.
- e. Program management and operational oversight for Defense Transportation Tracking System (DTTS).
- f. Program manager for the Retail Ordnance Logistics maintenance System (ROLMS).
- g. Management of Non-Combat Expenditure Allocation (NCEA) program (with oversight from OPNAV).
- h. Management of the Navy Demil program.
- i. Ordnance Stratification.

j. Publication of the Master Repairable Items List (MRIL).

k. Publication of the NAVSUP P-724.

1.4.64.1 Naval Ammunition Logistics Center (NAVAMMOLOGCEN and/or NALC) Naval Inventory Control Points Mechanicsburg and Philadelphia PA provide program support functions, including inventory management of appropriate secondary items for assigned weapon systems and equipment; performs inventory management for specified end items and non-weapons systems related items. NALC performs inventory management functions for Navy publications and forms; stocks, issues, and initially distributes Navy and Department of Defense printed matter.

1.4.65 Navy Weapons Quality Engineering. Navy weapons quality engineering functions are performed at Naval Weapons Support Facility Yorktown VA, Naval Surface Warfare Center Division Crane IN and Naval Surface Warfare Center Division Indian Head MD. Weapons quality and engineering monitoring functions to provide an assessment of weapon and component stockpile readiness, service life measurements, measurements of degradation and analysis of factors which adversely affects weapon quality, reliability, and serviceability.

1.4.66 Naval Ordnance Maintenance Units. Naval ordnance maintenance units are forward-based overseas intermediate level maintenance activities outfitted with

enhanced test and repair capabilities for specified weapons. Maintenance actions conducted at the naval ordnance maintenance units ensure that reliable weapons are available to deployed units.

1.4.67 Commander, Military Sealift Command. The Commander, Military Sealift Command, under the CNO, operates under the Navy Industrial Fund and provides ocean transportation (via government owned or commercial vessels) for personnel and cargo of all components of the department of Defense and as authorized for other Federal agencies; operates and maintains underway replenishment ships and other vessels providing mobile logistics support to elements of the combatant fleets; operates ships in support of scientific projects and other programs for Federal agencies; and prepares plans for the capability of expansion in time of emergency or war as necessary.

1.4.68 Commander, Operational Test and Evaluation Force. The Commander, Operational Test and Evaluation Force, under the CNO, conducts operational tests and evaluations of specific weapon systems, ships, aircraft and equipments, including procedures and tactics, where required; and, when directed by the CNO, assists development agencies in the accomplishment of necessary development, efforts, tests and evaluations.

1.4.69 COMFLEACTS/NAVACTS. COMFLEACTS and NAVACTS are fleet activities whose responsibilities include weapon receipt, storage, packaging and unpackaging, renovation, and issue.

CHAPTER 1.5

Naval Ordnance Maintenance Training

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CHAPTER 1.5

Naval Ordnance Maintenance Training

1.5.1 General. Training is a significant factor in achieving and sustaining ordnance readiness. This chapter provides an overview of the objective, policy, and responsibilities attendant to the planning, funding, and provision of naval ordnance maintenance training. A more in-depth discussion is presented in section 6 of this volume.

1.5.2 Objective. The objective of naval ordnance maintenance training is to ensure that personnel who operate, maintain, and support weapons systems and associated equipment are adequately trained and qualified to perform their respective functions in a manner which optimizes system design effectiveness.

1.5.3 Policy. The Chief of Naval Operations (CNO) has established the Naval Aviation Training Program policies, responsibilities, and procedures. It is CNO policy that all training incident to the Naval Ordnance Maintenance Management Program (NOMMP) shall be consistent with the provisions of that instruction. Every effort shall be made to ensure that personnel trained in ordnance maintenance are qualified and available simultaneously with the operational introduction of new weapons system equipment.

1.5.4 Scope. NOMMP training and certification requirements are applicable to all levels of ordnance maintenance and support functions.

1.5.5 Definitions

a. Inservice training (IST) is training conducted within the parent command to achieve and sustain the knowledge and skills required for qualification and certification to oper-

ate and/or maintain the weapons and support equipment within the scope of this directive.

b. On-the-job training (OJT) is training in the performance of a task or duty while engaged in its performance.

c. Practical-job-training (PJT) is the application of theoretical knowledge in laboratory or work situations.

d. Personnel Qualification Standards (PQS) is a written compilation of knowledge and skills, derived from a task analysis, required to maintain a specific equipment or system.

e. Explosives Handling Personnel Qualification and Certification (QUAL/CERT) Program is a process directed by OPNAVINST 8020.14/MCO P8020.11 (NOTAL) (Navy) and MCO 8023.3 (USMC) as a mandatory measure to ensure that initial qualification training and subsequent certification have been accomplished for all personnel assigned explosives tasks prior to performance of said tasking. The QUAL/CERT Program employs IST, OJT, PJT, and PQS.

1.5.6 Responsibilities. The CNO and Commandant of the Marine Corps are responsible for training Navy and Marine Corps forces, and for directing subordinate Department of the Navy commands in making available and distributing the manpower and material resources required to implement the Naval Aviation Training Program. The primary functionary for NOMMP training and certification is the Director, Air Warfare Division (CNO (N78)) under the Deputy Chief of Naval Operations for Warfare Requirements and Programs (CNO (N7)).

CHAPTER 1.6

Hazardous Material Control and Management

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CHAPTER 1.6

Hazardous Materials Control and Management

1.6.1 Unit Hazardous Materials Control and Management. OPNAVINST 4790.2H enumerates the organization, duties, and responsibilities for facility handling of hazardous materials by organizational and intermediate level maintenance units.

1.6.2 Airborne Weapons Hazardous Materials Control and Management. In addition to the Unit Hazardous Materials Control and Management (HMC&M) Program in OPNAVINST 4790.2H, the airborne weapons community

HMC&M Program minimizes and controls all hazardous materials specified in technical manuals for all commodities listed in volume I, paragraph 1.2.7.2 of this instruction except special weapons, common avionics equipment, common support equipment and targets QF-4N and QF-86F. An airborne weapons hazardous material "Authorized Use List" appears in NAVAIR 01-1A-75 (Airborne Weapons and Associated Equipment, Consumable Material Applications and Hazardous Material Authorized Use List) (NOTAL) and will be adhered to during all airborne weapons maintenance.

CHAPTER 1.7

Shipboard Weapons Integration Program

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CHAPTER 1.7

Shipboard Weapons Integration Program

1.7.1 General. This chapter addresses the Shipboard Weapons Integration Program and explains how it is used to ensure facilities aboard ships can safely and efficiently accommodate a new or modified weapon system. Uniform procedural instructions are included for use of the Shipboard Weapons Integration Team (SWIT) during scheduled events leading to complete weapons integration prior to Initial Operating Capability (IOC).

1.7.2 Purpose. The purpose of this chapter is to establish a program to conduct shipboard weapons integration and improve the process for safe and effective introduction of a new or modified weapons system to the Fleet.

1.7.3 Shipboard Weapons Integration Program Elements.

1.7.3.1 During Milestone I the Program Manager must begin development of procedures to ensure the new or modified weapon system can be safely and efficiently deployed aboard each class ship the system will be operated from, as identified in the Operation Requirements Document (ORD). Early participation in program development by the SWIT will identify the impact of the weapon system aboard each class ship. Facility requirements will be identified and documented. The SWIT is comprised of personnel from Naval Air Warfare Center Weapons Division, Pt Mugu, CA and Type Commander field representatives from the Naval Air and Surface Forces, Atlantic and Pacific Fleets.

1.7.3.2 A site survey on each class ship must be conducted to identify if adequate facilities are available to safely support the weapon system. These facilities cover spaces for handling, stowage, breakout, assembly, test and programming, and ready service. Requirements for support equipment, aircraft armament equipment, and ancillary equipment are identified. Requirements for electrical power, compressed air, munitions handling equipment, and servicing equipment are identified. Hazards of Electromagnetic Radiation to Ordnance (HERO), electromagnetic interference (EMI), fire suppression, and personnel hazardous conditions are identified to ensure safe support of the weapon system throughout the intended shipboard environment. and servicing equipment are identified. Hazards of Electro-

magnetic Radiation to Ordnance (HERO), Electromagnetic Interference (EMI), fire suppression, and personnel hazardous conditions are identified to ensure safe support of the weapon system throughout the intended shipboard environment.

1.7.3.3 If facilities are not adequate aboard any class ship, a Proposed Military Improvement (PMI) document is generated. The PMI is intended to increase the ability of the ship to support the new or modified weapon system. It describes the improved equipment, system, and/or capability to be installed, its purpose, and its relationship to existing equipment systems. After approval by the Program Management Office in NAVAIR, the PMI is forwarded to the Office of the Chief of Naval Operations (OPNAV) program sponsor for approval and signature. The PMI is then forwarded to the Naval Sea Systems Command (NAVSEA) Platform Directorate. Upon approval and signature, NAVSEA will forward the PMI to their OPNAV platform sponsor. Final approval of the PMI leads to preparation and submittal of a Justification Cost Form (JCF) by NAVSEA. The JCF is used to arrive at a management decision to proceed with development of a ship alteration (SHIPALT). Review of all SHIPALTs by cognizant NAVAIR personnel is vital to ensure weapon system requirements are satisfied.

1.7.3.4 During Milestone II preparations shall be made to validate and certify the SHIPALT installation by performing a Ship Installation Assurance Test (SIAT). The SIAT is a test to demonstrate that the new or modified weapon support facilities have the capability to satisfactorily fulfill weapons handling, stowage, assembly, and checkout operations for which they were designed. The SIAT is required to evaluate and certify the SHIPALT installation is ready for acceptance. Support equipment, containers, and inert handling shapes of all types of weapons supported by the facilities are provided and demonstrated during the SIAT. A formal report is prepared and forwarded to NAVAIR and NAVSEA identifying all discrepancies and required resolution. A follow-up visit is preformed to ensure discrepancies are corrected prior to completion of the overhaul.

1.7.3.5 During Milestone III initiation of the Ship Suitability Test (SST) process shall begin. The SST is

conducted for all air-launched weapons and aircraft defense systems introduced into the Fleet for operational shipboard use. The test is accomplished during late Technical Evaluation (TECHEVAL). The test involves Navy personnel subjecting the weapon system to under-way replenishment, dock-side replenishment, strike-down, stowage, de-canning, assembly, servicing and checkout, strike-up, aircraft loading and downloading, arming, and de-arming. Handling operations are checked for simplicity and compatibility with the shipboard environment. The test requires participation of the embarked air wing, shipboard departments, and auxiliary naval vessels. It ensures that Naval personnel can support the system aboard ship using the training and technical documentation provided by the program. A formal report, including photographs, is forwarded to NAVAIR and other cognizant activities.

1.7.4 Responsibilities.

1.7.4.1 Naval Air Warfare Center Weapons Division shall perform the following:

- a. Participate in design and program reviews specifically concerned with shipboard integration development and requirements.
- b. Coordinate and conduct Site Surveys to establish shipboard facility requirements for new or modified weapon systems.
- c. When shipboard facilities are inadequate to support the new or modified weapon system, develop and prepare PMIs.
- d. Participate in the development and review of the SHIPALT to ensure program requirements are met.
- e. Control and direct shipment of inert weapon handling shapes, containers, and support equipment for SIATs.
- f. Support, participate in and/or conduct the SIATs. Report on SIAT discrepancies.
- g. Review weapons safety requirements, armament support equipment, and container design for new or modified weapon systems.
- h. Coordinate and conduct the SSTs for new and modified weapons systems. Report on SST results.
- i. Participate as members in the Weapon System Explosive Safety Review Board (WSESRB).

1.7.4.2 Type Commander (TYCOM) field representatives from the Naval Air and Surface Forces, Atlantic and Pacific Fleets perform the following:

- a. Provide direct independent on-site engineering and technical service to Force Weapons and Ships Material Officers in support of conventional air-launched weapon systems.
- b. Represent the TYCOM at SIATs and yard-walk-through with responsibility for confirming proper progression of SHIPALT installation.
- c. Provide assistance to NAVAIR, NAVSEA, TYCOMS, naval and commercial shipyards, and other activities in support of air launched shipboard weapons handling requirements.
- d. Provide TYCOM with technical assistance in the areas of air-launched weapons and weapons systems stowage, handling and maintenance. Furnish guidance and coordination between TYCOM, SHIPS, NAVAIR/NAVSEA, NAWCAD, NAWCWD, shipyards, repair facilities, and other naval activities. This service is directly related to the operation, maintenance, diagnosis, repair, overhaul, modification, test, certification and safety of all types of air launched weapon/systems including stowage facilities, installed support and handling systems.
- e. Assist NAVAIR and NAVSEA in the development of weapon/system related SHIPALTs and repairs. Also develops ship modernization and maintenance planning.
- f. Coordinate with NAWCAD, NAWCWPNS and TYCOMs on solutions to Fleet problems in the air-launched weapons arena. Responsible for the maintenance and certification of magazine sprinkler systems, weapons elevators, material handling equipment, and ordnance support equipment.
- g. Conduct the SIAT follow-up visits with ships and the installing activity to ensure resolution of SIAT discrepancies.
- h. Participate as team members in the WSESRB.

SECTION 2

Classification and Assignment of Maintenance Functions and Responsibilities

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CHAPTER 2.1

Introduction

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CHAPTER 2.1

Introduction

2.1.1 General. This section addresses the classification of maintenance functions and assignment of responsibilities for ordnance maintenance. Chapter 2.2 defines organizational, intermediate, and depot level ordnance maintenance functions and chapter 2.3 assigns responsibilities for ordnance maintenance.

2.1.2 Purpose and Scope. This section addresses the integrated logistics support effort for airborne weapons and surface and subsurface launched versions of weapons and defines the maintenance process involved.

2.1.3 Maintenance Concepts

2.1.3.1 As weapons become more complex and expensive and maintenance resources decrease, the need to manage the integrated logistics support process for weapons increases. The process of weapons maintenance is evolving and lessons learned are adding to the integrated logistics support process. The organizational, intermediate, or depot level maintenance activity must have a clear, concise definition of its maintenance functions and responsibilities to avoid unnecessary duplication of workloads. Considerations for manpower, facility size, workload capacity, and cost effectiveness must be taken into account to successfully manage our limited maintenance resources.

2.1.3.2 The all-up-round maintenance concept was implemented in 1976. That concept increased asset readiness, reduced cost, and eased the maintenance workload. Presently, the concept of competition between organic and commercial maintenance activities is being encouraged as a means of keeping the cost of weapons maintenance down, reducing the manpower requirements, and shortening the maintenance repair time.

2.1.4 Asset Readiness

2.1.4.1 Policies, procedures, and maintenance processes defined in the Naval Ordnance Maintenance Management Program respond to the CNO asset readiness objectives and to fleet operational requirements. The asset readiness objective is the goal to be achieved and maintained. Asset readiness objectives are derived from the inventory objectives, developed using the non-nuclear ordnance requirements (NNOR) model as prescribed by OPNAVINST 8011.9A (NOTAL). This model determines requirements based on

many factors, one of which is the maintenance pipeline. Asset readiness is expressed as the ratio (in percentage) of serviceable items, not in the maintenance pipeline, to the total number of assets in the inventory.

2.1.4.2 Workload planning and programming of weapons quantitative maintenance workloads at shore-based maintenance facilities is predicated on the achievement of published CNO asset readiness objectives and ship fill requirements during each fiscal year. Objectives are published in the Workload Planning and Programming OPNAVINST 4850.1B (NOTAL).

2.1.4.3 Activities responsible for preparing POM/Budget and baseline assessment submissions for rework of naval conventional ordnance shall program for maintenance of total projected unserviceable CAIMS (or its successor CAIMS-OSE/ OIS) reported in-bin inventory. This shall not exceed the total requirement published in current NNOR or the constrained NNOR whichever is the greater. Those items not normally included in the NNOR such as gun ammunition shall have maintenance requirements based on a documented baseline such as shipfill, combat consumption, training pipeline or component attrition/failure.

2.1.4.4 The programmed maintenance requirement shall be consistent with engineered maintenance interval expirations and aviation ordnance captive carry policy.

2.1.4.5 Maintenance will not be funded for ordnance with ready-for-issue inventory in excess of NNOR levels or other documented baseline requirements for non-NNOR items. Unfunded maintenance requirements will be carried forward and phased into out year workload planning/budgeting.

2.1.4.6 Some ordnance items are removed from the NNOR and replaced with improved or advanced variants. Requirements for newer variants normally cannot be met by initial production. In this event, maintenance of legacy ordnance items shall be funded to meet constrained requirements as preferred ordnance inventories ramp up to meet requirements.

2.1.4.7 Program Managers with weapons that are covered by manufacturer's warranty that have no repair capability organic to the Navy must POM/budget for the out-of-warranty costs for maintenance by the manufacturer."

2.1.5 Mission Readiness. Fulfillment of fleet operational objectives is measured through use of the mission readiness percentage. Mission readiness is computed using the ratio of total serviceable units to the quantity required to meet the planning objective.

2.1.6 Defense Security Assistance Program

2.1.6.1 Military assistance is provided to eligible countries in the form of Foreign Military Sales (FMS) and Grant Aid. The objective of FMS and Grant Aid programs is to furnish military forces of eligible countries with appropriate defensive equipment and supporting material, including services, and, in the case of FMS, to contribute toward a favorable balance of payments.

2.1.6.2 Unlike Grant Aid programs, FMS agreements commit the government to delivery schedules and require the foreign countries to commit funds. All large FMS programs involve political factors which make any deviation from agreed commitments undesirable.

2.1.6.3 The Naval Air Systems Command (COMNAVAIRSYSCOM) has been tasked with extensive responsibilities in support of the FMS and Grant Aid programs. Recipient countries request COMNAVAIRSYSCOM to directly provide the coordination required, particularly before and during initial deployment. COMNAVAIRSYSCOM (AIR-3.1) is responsible for providing ordnance logistics support, services, and management.

2.1.6.4 NAVAIRSYSCOM (AIR-3.1) is responsible for planning, programming, and assuring the funding of intermediate and depot level repair and retrofit programs and of the replacement-in-kind program whereby the Navy is committed to upgrade FMS country assets by providing exchange missiles or components thereof on a one-for-one basis. The replacement-in-kind program effectively replaces older Navy missiles or components with the most recent models and provides the replaced components to FMS countries. In order to maintain the Navy planning objective, it is essential that these exchanges take place simultaneously and that Conventional Ammunition Integrated Management System records are updated accordingly.

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CHAPTER 2.2

Classification of Organizational, Intermediate, and Depot Level Ordnance Maintenance Functions

2.2.1 General. This chapter lists the ordnance maintenance functions assigned to organizational, intermediate, and depot level maintenance activities. Assignment of individual ordnance maintenance functions to a maintenance level allows most ordnance maintenance activities to further determine the specific tasks they are required to perform. To determine the extent to which a repair task can be undertaken, the ordnance maintenance activity must consult the appropriate maintenance instruction, operating and service instruction manual, or technical directive that pertains to each supported weapon system or component.

2.2.2 Ordnance Maintenance Functions

2.2.2.1 The three-level maintenance concept is fundamental to the ordnance community and is designed to place maintenance functions at the activity that is most suited to perform those maintenance functions based on operational needs, fiscal constraints, and other planning factors. The organizational level is that level of maintenance that is normally the responsibility of and performed by a using organization on its assigned systems, equipment, and material. The intermediate level is that level of maintenance that is normally the responsibility of and performed by designated maintenance activities in direct support of the using organizations. The depot level is that level of maintenance supporting the organizational and intermediate levels by performing maintenance which is beyond their responsibility or capability and providing technical assistance.

2.2.2.2 Functions assigned here identify the lowest maintenance level at which a task may normally be performed. However, higher level maintenance activities may be assigned lower level functions. For example, preoperational, daily, and postoperational inspections of organizational level equipment used by an intermediate level activity. Additionally, lower level maintenance activities may be tasked to perform higher level maintenance functions in support of a particular weapon system, component, or item of equipment. Depot level maintenance will only be performed by those activities designated herein unless a deviation request, forwarded via the chain of command, is approved by the Chief of Naval Operations.

2.2.2.3 Functional definitions contained in this chapter are used to identify support equipment, tools, and material as well as technical manual data. Allowance lists for support equipment, tools, and material reflect the assigned maintenance level. Although a specific function may be assigned to weapons intermediate level maintenance, it does not mean that all weapons intermediate level maintenance activities are outfitted to perform this function.

2.2.3 Air Launched Weapon Systems Maintenance Functions. Maintenance functions for air launched missiles are listed in figure 2-2-1; those for bombs, rockets, and pyrotechnics, are listed in figure 2-2-2 and volume II section 2.

2.2.4 Cartridges/Cartridge Actuated Devices/Propellant Actuated Devices/Pyrotechnics for Aviation Life Support Systems Maintenance Functions. The functions listed in figure 2-2-3 are general and apply regardless of installation. Notices of Ammunition Reclassification (NARs) are issued by the Naval Ammunition Logistics Center (NALC) and apply to all levels of maintenance. NARs are not an authorized medium for directing or authorizing the removal or replacement of aircraft-installed Cartridges/Cartridge Actuated Devices (CADs)/Propellant Actuated Devices (PADs)/Pyrotechnics used in Aviation Life Support Systems (ALSS) or affecting aircraft operational availability. The Technical Directive (TD) system was established for that purpose. If an attendant TD has not been issued within 3 days of receipt of a NAR (affecting Cartridges/CADs/PAD/Pyrotechnics used in ALSS, aircraft, or availability), all aircraft controlling custodians or type commanders shall request TD status from the Naval Air Systems Command (AIR-3.1).

2.2.5 Armament Weapons Support Equipment Maintenance Functions

2.2.5.1 For the purpose of classifying maintenance functions, support equipment is defined as all equipment required on the ground to make an aeronautical system, support system subsystem, or end item of equipment operational in its intended environment.

Organizational	Intermediate	Depot
<p>Visual inspection (special, conditional, preflight, and postflight).</p> <p>Preflight on-aircraft functional test.</p> <p>Attaching screw-on type wings and fins (including replacement of external hardware).</p> <p>Compliance with NARs.</p> <p>Compliance with TDs.</p>	<p>Visual inspection (special, conditional, and breakout).</p> <p>Attaching screw-on type wings and fins (including replacement of external hardware).</p> <p>Breakout, strikeup, and strikedown from/to magazines.</p> <p>Corrosion control treatment and repainting.</p> <p>Visual inspection of containers and cradles.</p> <p>Compliance with NARs.</p> <p>Compliance with TDs.</p> <p>Reprogramming</p> <p>All-up-round and section testing.</p>	<p>Visual inspection (special, conditional, and breakout).</p> <p>All-up-round assembly and disassembly.</p> <p>All-up-round and section testing.</p> <p>Fault isolation to the section level (including disassembly and assembly).</p> <p>Section repair (guidance and control).</p> <p>Replacement of warhead components (fuzes and booster, safe/arm devices, firing switches, etc.).</p> <p>Replacement of rocket motor components (igniters, exit cones, nozzles, and safe/arm devices).</p> <p>Visual inspection and refurbishment of containers and cradles.</p> <p>Paint touchup and cleaning.</p> <p>Compliance with NARs.</p> <p>Compliance with TDs.</p> <p>Component X-ray.</p>

Figure 2-2-1. Maintenance Functions Applicable to Air Launched Missiles

Organizational	Intermediate	Depot
BOMBS		
Breakout, visual inspection, preparation for loading. Upload and download from operational commitments. Compliance with NARs. Compliance with TDs. JDAM, compliance with TCTOs/TDs.	Packaging and palletizing weapons, components, and rounds. Breakout, installing components, and visual inspection. Strikeup and strikedown from operational commitments. Container inspections. Cleaning and painting. Compliance with TDs. Compliance with NARs. Performing BIT and Reprogramming (soft ware upgrades) with test support equipment, such as the common munitions BIT and Reprogramming equipment (CMBRE) JDAM, compliance with TCTOs/TDs.	Receiving inspection. Repair and patch thermal coating of general purpose bombs. Painting and corrosion control. Testing and replacement of cluster bomb components. Compliance with TDs. Compliance with NARs. JDAM, compliance with TCTOs/TDs.
PYROTECHNICS		
Breakout, visual inspection, and preparation for loading. Compliance with NARs. Compliance with TDs. Upload and download from operational commitments. Preloading dispensers	Packaging and/or palletizing complete round or components. Strikeup and strikedown from operational commitments. Compliance with TDs and NARs.	Receiving inspection. Storage and shipment. Compliance with TDs. Compliance with NARs.

Figure 2-2-2. Maintenance Functions Applicable to Free-Fall Bombs, Cluster Bombs, Rockets/Jet Assisted Takeoff, Pyrotechnics, Rockets and Rocket Launchers (2E Cognizance Ammunition)

Organizational	Intermediate	Depot
ROCKET LAUNCHERS		
Packaging and palletizing. Breakout and visual inspection. Mechanical and electrical testing. Compliance with NARs and TD's. Upload and download from operational commitments. Preloading dispensers. Rocket loading and unloading.	Packaging and palletizing. Breakout and visual inspection. Mechanical and electrical testing. Compliance with NARs and TD's. Strikeup and strikedown from operational commitments. Rocket loading into/from launchers	Receiving inspection. Repair and patch thermal coating of Rocket Launchers. Painting and corrosion control. Compliance with TDs. Compliance with NARs.
ROCKETS/JET ASSISTED TAKEOFF		
Upload and download from operational commitments. Packaging and palletizing complete components. Breakout, installing components, visual inspection, and load. Compliance with NARs. Compliance with TDs.	Strikeup and strikedown from operational commitments. Packaging and palletizing complete components. Breakout, installing components, visual inspection. Compliance with NARs. Compliance with TDs.	Receiving inspection. Painting and corrosion control. Compliance with NARs and TDs. Replacing worn defective parts, and repairing damaged components. Component X-ray.

Figure 2-2-2. Maintenance Functions Applicable to Free-Fall Bombs Cluster Bombs, Rockets/Jet Assisted Takeoff, Pyrotechnics, Rockets, and Rocket Launchers (2E Cognizance Ammunition) (Cont'd)

Organizational	Intermediate	Depot
Breakout and visual inspection. Installation and removal in parent rack. Compliance with NARs and TD's.	Breakout and visual inspection. Installation and removal in parent rack. Compliance with NARs and TD's.	Breakout and visual inspection. Installation and removal in parent rack. Compliance with NARs.

Figure 2-2-3. Maintenance Functions Applicable to Cartridges, Cartridge Actuated Devices, and Propellant Actuated Devices

2.2.5.2 Armament weapons support equipment is categorized as common (general purpose) and peculiar (specific purpose) and is further divided into the following categories.

2.2.5.2.1 Armament support equipment includes all equipment whose primary function is support of aircraft-installed armament systems and is used primarily by the Aircraft Intermediate Maintenance Department (AIMD), Marine Aviation Logistics Squadron (MALS) or squadron. Such equipment is assigned to the AIMD and squadron and is contained in the appropriate activity's Individual Material Readiness List. Examples of this type of equipment are bomb hoisting units (HLU-196), loaders, and adapters used to upload/download weapons. AIMD and MALS perform intermediate maintenance on armament support equipment and weapons support equipment as it is discussed throughout this manual. Maintenance functions are listed in figure 2-2-4.

2.2.5.2.2 Weapons support equipment includes all equipment whose primary function is support of the weapon and is essentially used by the weapons department. Such equipment is assigned to the AIMD and subcustodied to the weapons department. The equipment is listed on the AIMD Individual Material Readiness List as well as in the weapons department subcustody listing. Examples of this type equipment are weapons skids, slings, carriers, assembly stands, beams, bomb trailers, weapons handling equipment, and weapons (checkout) test equipment specifically designed or authorized for support of a particular weapon. Maintenance functions are listed in figure 2-2-4.

2.2.5.2.3 Logistics support equipment includes all equipment with facility-related functions which may be used by the weapons department as well as other departments (i.e., supply, public works, etc.). Such equipment is listed in various allowancing documents under the general heading of packaging, handling, storage, or transportation equipment. Examples of this type equipment are trucks, forklifts, and facility-installed cranes. Maintenance functions are listed in figure 2-2-4.

2.2.6 Missile Target Equipment Maintenance Functions. The general classification in paragraph 2.2.1 governing assignment and classification of airborne armament maintenance functions is applicable to missile targets. However, because of the unique characteristics inherent in target design, operation, and service life, all missile target operating activities are designated as organizational or intermediate level activities. Maintenance functions are listed in figure 2-2-5.

2.2.7 Aircraft Armament Equipment. Aircraft armament equipment includes all equipment which is designed to suspend, release, and launch ordnance from an aircraft. The maintenance, including calibration, inventory control, and reporting, of armament equipment is an integral part of the task of maintaining ordnance systems. Maintenance functions assigned to those levels are listed in figure 2-2-6 and are discussed in volume II, section 7.

2.2.8 Aircraft Guns and Associated Equipment. Aircraft guns and associated equipment include all installed systems, gun pods, and the linkless ammunition loading system. Maintenance functions assigned to those levels are listed in figure 2-2-7 and are discussed in volume II, section 3.

2.2.9 Maintenance Data Reporting

2.2.9.1 Armament support equipment and weapons support equipment contained in the Aircraft Maintenance Material Readiness List Program will be maintained by the weapons department at the intermediate level using the policies, procedures, and formats specified in OPNAVINST 4790.2H (NOTAL) (Naval Aviation Maintenance Program).

2.2.9.2 Armament support equipment, weapons support equipment, and logistics support equipment not contained in the Aircraft Maintenance Material Readiness List Program will be maintained by the weapons department at the intermediate and depot levels using the policies, procedures, and formats specified in volume II, section 8.

Organizational	Intermediate	Depot
<p>Daily and preuse inspection.</p> <p>Service (grease, oil, fuel).</p> <p>Corrosion prevention and cleaning and minor corrosion treatment.</p> <p>Compliance with TDs (Support Equipment Bulletin/Support Equipment Change).</p> <p>Preservation categories A, B, and C.</p>	<p>Acceptance, special, periodic, and preuse inspections.</p> <p>Preservation categories A, B, and C.</p> <p>Overhaul components.</p> <p>Calibrate and weight test.</p> <p>Adjusting, removing, or replacing component parts and subassemblies</p> <p>Fabrication of replacement parts.</p> <p>Corrosion prevention control.</p> <p>Metal and machine work.</p> <p>Welding and soldering.</p> <p>Hydraulic systems (flush cleaning, purging, and sampling).</p> <p>Examination and testing (magnetic, fluorescent, dye-penetrant, and X-ray).</p> <p>Nondestructive inspection (includes visual) optical, liquid penetrant, magnetic particle, eddy current, ultrasonic, and radiographic inspections.</p> <p>Inventory control and reporting.</p> <p>Compliance with TDs (Support Equipment Bulletin/Support Equipment Change).</p>	<p>Depot activities perform basically all intermediate functions in addition to the following:</p> <p>Preservation categories A, B, and C.</p> <p>Metal work (pressing).</p> <p>Welding and soldering (electric spot, seam, and roll).</p> <p>Heat treating and baking.</p> <p>Hardness test. Magnetic perturbation and leakage.</p> <p>Compliance with TDs (Support Equipment Bulletin/Support Equipment Change).</p>

Figure 2-2-4. Maintenance Functions Applicable to Armament Weapons Support Equipment

Organizational	Intermediate	Depot
<p>Inspection (prelaunch, postlaunch, conditional, acceptance and initial buildup).</p> <p>Compliance with TDs.</p>	<p>Inspection of peculiar support equipment (preoperational and calendar).</p> <p>Inspection (calendar).</p> <p>Inspection (removed components, bench check, and test required).</p> <p>Servicing.</p> <p>Removal and replacement of strainers, filters, fasteners, safety wire, etc.</p> <p>Removal and installation of components.</p> <p>Compliance with TDs.</p>	<p>Removal and installation of components.</p> <p>Functional test and adjustment.</p> <p>Repair of components.</p> <p>Overhaul of components.</p> <p>Compliance with TDs.</p>

Figure 2-2-5. Maintenance Functions Applicable to Aerial Target Equipment

Organizational	Intermediate	Depot
<p>Receiving, inspecting, and attaching to aircraft.</p> <p>Perform on aircraft functional test.</p> <p>Corrosion prevention and cleaning and minor corrosion treatment.</p> <p>Service (air, nitrogen coolant, etc.).</p> <p>Comply with TDs if applicable.</p> <p>Perform periodic inspection.</p>	<p>Receiving, stowing, issuing, packing, and shipping.</p> <p>Test, check, fault isolation, adjustment, repair, and remove and replace components in accordance with maintenance instruction manuals.</p> <p>Perform periodic inspections.</p> <p>Compliance with TDs.</p> <p>Wiring harness and cable repair.</p> <p>Remove and replace Shop Replaceable Assemblies/Weapon Replaceable Assemblies.</p> <p>Corrosion treatment: strip, treat, repaint, and restencil.</p> <p>Provide ready-for-issue assets to using activities.</p> <p>Maintain and manage the aircraft armament equipment pool for the TYCOMs.</p>	<p>Perform required rework of armament beyond the capability of the intermediate activity.</p> <p>Repair and calibrate precision measuring equipment.</p>

Figure 2-2-6. Maintenance Functions Applicable to Aircraft Armament Equipment

Organizational	Intermediate	Depot
<p>Perform scheduled maintenance inspections in accordance with applicable maintenance requirement cards.</p> <p>Perform preloading checks and inspections.</p> <p>Load and unload ammunition (installed systems).</p> <p>Gun pod install on or remove from aircraft.</p> <p>Arm and dearm aircraft.</p> <p>Perform corrosion prevention and control.</p> <p>Comply with TDs if applicable.</p> <p>Maintain firing records.</p>	<p>Perform 7,500, 15,000, 30,000, and 60,000 round inspections in accordance with applicable maintenance instruction manuals.</p> <p>Comply with TDs.</p> <p>Test and check, fault isolation, adjust, repair, remove, and replace components in accordance with maintenance instruction manuals, handling and maintenance instructions.</p> <p>Load and unload ammunition in/from gun pods and linkless ammunition loading system transporters.</p> <p>Perform corrosion prevention and control.</p> <p>Issue or receive to/from using activities.</p>	<p>Perform complete overhaul of M61A1 gun after 120,000 rounds.</p> <p>Perform all necessary removal, repair, and replacement actions of major components, parts, and subassemblies.</p> <p>Comply with TDs.</p> <p>Perform nondestructive inspection component, including X-ray, magnetic, fluorescent, and dye-penetrant test.</p> <p>Perform corrosion prevention and control.</p>

Figure 2-2-7. Maintenance Functions Applicable to Aircraft Guns, Gun Pods, and Associated Equipment

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CHAPTER 2.3

Assignment of Ordnance Maintenance Responsibilities

2.3.1 Assignment of Maintenance Responsibility

2.3.1.1 The Chief of Naval Operations and the Commandant of the Marine Corps (CMC) assign ordnance maintenance responsibilities to activities of Navy and Marine forces. The Naval Air Systems Command assigns maintenance responsibilities to field activities managed by them.

2.3.1.2 Designated intermediate level activities perform selected ordnance maintenance functions for an entire logistics area as recommended by the applicable type commander and approved by the Naval Air Systems Command (AIR-3.1). Also, specified organizational level maintenance activities are authorized to perform limited intermediate level maintenance functions on those systems and equipment unique to the assigned mission of that activity.

2.3.1.3 Navy fleet activities, except aviation training ships and nonaviation ships supporting aircraft, assigned the responsibility for performing intermediate level maintenance will establish an Intermediate Maintenance Activity (IMA) that consists of an Aircraft Intermediate Maintenance Department (AIMD), weapons department, public works department (ashore) or engineering department (afloat), and the supply department. In carrying out its maintenance responsibilities, the weapons department performs on-equipment maintenance but is authorized to perform intermediate level maintenance to the limits of its capabilities. For maintenance beyond those limits, the other IMA members will provide required support within their capabilities.

2.3.1.4 Throughout this instruction, any reference to the weapons department will include weapons divisions on amphibious assault ships (LPH/LHA/LPD) and other commands where a weapons division serves the same functions as a weapons department.

2.3.2 Shore Activities. Shore activities involved in the maintenance and support of ordnance and related equipment

are classified in one of three categories: (1) Navy; (2) other service; or (3) commercial. Regardless of which category an activity falls under, each one is assigned one or more of the three levels of maintenance (organizational, intermediate, and depot) and the responsibility for carrying out the function inherent to that level as previously defined in chapter 2.2. Figures 2-3-1 through 2-3-6 identify the maintenance level(s) assigned to those activities responsible for maintaining ordnance and related equipment. Stations and activities of the shore establishment are assigned responsibility for performing the level of ordnance maintenance designated in figure 2-3-1.

2.3.3 Industrial Establishments. The industrial establishments listed in figure 2-3-2 are responsible for performing the level of maintenance on ordnance as indicated.

2.3.4 Aviation Ships. Aviation ships are responsible for the levels of ordnance maintenance designated in figure 2-3-3. Nonaviation ships are not responsible for ordnance maintenance; however, they shall provide required organizational level facilities (including all installed equipment).

2.3.5 Navy Squadrons and Air Wings. These activities are responsible for performing ordnance maintenance designated in figure 2-3-4.

2.3.6 Marine Corps Aviation Squadrons. These activities are responsible for performing ordnance maintenance designated in figure 2-3-5.

2.3.7 Marine Corps Shore Activities. The Marine Corps air stations and Marine Corps air facilities shown in figure 2-3-6 are responsible for performing the designated levels of maintenance and for providing flightline services for transient aircraft. The stations are responsible for providing maintenance facilities for tenant activities. In addition, the stations function as secondary stock points to store and issue ordnance to tenant and deployed activities.

Activity	Level		Note	Activity	Level		Note
	Organiza- tional	Inter- mediate			Organiza- tional	Inter- mediate	
NAS Atlanta	X	X		NAVSTA Mayport	X	X	
NAF Atsugi	X	X		NAS Meridian	X	X	
PMRF Barking Sands	X	X		NAF Mildenhall	X	X	
NAS Brunswick	X	X		NAF Misawa	X	X	
NAWS China Lake	X	X		NAVSUPPACT Naples	-	-	
NAS Corpus Christi	X	X		NAS JRB New Orleans	X	X	
NAVSUPPFAC Diego Garcia	X	X		NAS Oceana Det Norfolk	X	X	
NAS JRB Ft Worth	X	X		NAS North Island	X	X	
NAF El Centro	X	-		NAS Oceana	X	X	
NAS Fallon	X	X		NAS Pensacola	X	X	
NAVSTA Guantanamo	X	X		NAS Patuxent River	X	X	
NAS Jacksonville	X	X		NCSC Panama City	X	X	
NAS Key West	X	X		NBVC Point Mugu	X	X	
NAS Keflavik	X	X		NS Roosevelt Roads	X	X	
NAS Kingsville	X	X		NS Rota	X	X	
NAS Lemoore	X	X		NAVSUPPACT Souda Bay	X	-	
NAVMAG Pearl Harbor	X	X		NAS Sigonella	X	X	
COMFLTACT Yokosuka	X	-		NAF Washington	X	X	
COMFLTACT Okinawa	X	X		NAS Whidbey Island	X	X	
COMNAVFORKOREA	X			NAS JRB Willow Grove	X	X	
				NAS Whiting Field	X	X	
Notes 1. Activities not under the management control of the Naval Air Systems Command which have limited intermediate level support capabilities will be supported as directed/negotiated by type commanders. Intermediate level maintenance performed on equipment on subcustody to departments other than the air wing requires the support of additional personnel from the department having such equipment on subcustody. 2. A dash (-) indicates limited ordnance maintenance responsibility for that particular level. 3. An "X" assigns maintenance responsibility for that particular level. 4. Blanks indicate no responsibility for that particular level. 5. COMFLTACT Yokosuka and COMNAVKOREA are storage and issue only. 6. COMFLTACT Okinawa is ammunition storage and issue activity, with Target repair and launch capability.							

Figure 2-3-1. Assigned Levels of Maintenance by Activity, Navy

Activity	Level		Activity	Level	
	Inter-mediate	Depot		Inter-mediate	Depot
Weapons Station (WPNSTA) Yorktown Detachment		X	Contractors:		
Weapons Station (WPNSTA) Seal Beach Port Hadlock Det.		X	Raytheon Missile Systems Co. (SIDEWINDER, SPARROW, HARM, and AMRAAM)		X
Weapons Station (WPNSTA) Fallbrook Detachment.		X	General Dynamics SPARROW		X
NAWMU-1 Guam	X		Ford Aerospace (SIDEWINDER)		X
NAWCWPNS CHINA LAKE (SIDEARM Guidance and Control)		X			
NAVSURFWARCENDIV Indian Head (Rocket motors, propulsion section, gas generators, and igniters)		X	Boeing Aerospace (JDAM) (HARPOON/SLAM/SLAM-ER)		X X
AFLC Ogden (MAVERICK AUR, Center Aft Section)		X	Norsk Forsvarsteknologi (A/S) (PENGUIN-Wings)		X
Anniston Army Depot (HELLFIRE)		X	Raufuss A/S (PENGUIN Rocket & Warhead)		X
NAVACTS Guam	X				
COMFLEACT Sasebo	X				
Army Depot Letterkenny (SPARROW, SIDEWINDER and MAVERICK Guidance and Control Section) (SLAM/SLAM-ER Seeker)		X			

Figure 2-3-2. Assigned Levels of Maintenance for Ordnance at Industrial Establishments

Activity	Level		Note
	Organizational	Intermediate	
CV (Aircraft Carrier)	X	X	1, 2, 3, 5, 6
LHA/LHD (Amphibious Assault Ship, General Purpose)	X	X	1, 2, 3, 6, 9
LPD (Amphibious Transport Dock)	X	X	1, 3, 7, 9
ACS (Aviation Capable Ship less LPD)	X		3, 8, 9
MCS (Mine Countermeasures Ship)	X	X	1, 2, 3, 4, 6, 9
<p>Notes</p> <ol style="list-style-type: none"> Intermediate level maintenance performed on equipment on subcustody to departments other than the air wing requires additional support personnel from the department having such equipment on subcustody. CVs/LHAs/LHDs/LPDs/MCSs are assigned the following maintenance responsibilities: provide intermediate and organizational level maintenance facilities for use by embarked aviation units; provide and maintain required custody coded (P and E) items of support equipment for use by embarked aviation units (other than organizational property); and provide intermediate level support and organizational level maintenance material to embarked aviation units. Transportation vehicles assigned to the ship are not aeronautical in nature; consequently, they do not fall under the purview of ordnance maintenance. Command and control ship for surface mine sweepers and all airborne mine countermeasures operations. Support small craft operations and provide O-level/I-level maintenance for mine warfare equipment, helicopters, and associated SE for embarked squadrons, as required by the aviation TYCOM, and adhere to direction from MINEWARCOM. Weapons department and IMA are assigned intermediate level support for the test, repair, calibration, and maintenance of air launched missiles and associated missile test equipment. CVs/LHAs/LHDs/MCSs. The following maintenance responsibilities are assigned in support of crash salvage equipment, flight and hangar deck cleaning and maintenance equipment: (a) Air department is assigned custody of and responsibility for organizational level maintenance; (b) IMA is responsible for intermediate level maintenance; (c) Technical assistance shall be provided by the electronics material officer for associated radio equipment. For TAU-2 fire fighting equipment, technical assistance will be provided by the engineering department. LPDs provide and maintain items of support equipment, TAU-2, and AS32P-16 fire fighting equipment in support of embarked aviation units. Intermediate level maintenance is limited to troubleshooting, replacement of minor components (starters, switches, belts, tires, wheels, etc.), and corrosion control. Wings, groups, squadrons, and detachments will retain or crossdeck organizational property at the discretion of the cognizant ACC or TYCOM. Surface TYCOMs are responsible for O-level maintenance and inventory management of SE per directives published by the aviation TYCOM. I-level maintenance is done by IMAs designated by the aviation TYCOM. D-level rework of SE is scheduled through the aviation TYCOM. 			

Figure 2-3-3. Assigned Levels of Maintenance, Aviation Ships

Activity	Level		Note
	Organizational	Intermediate	
VS (Air Antisubmarine Squadron)	X		
VX (Air Development Squadron)	X	-	1
VQ (Fleet Air Reconnaissance Squadron)	X	-	1
VAK (Aerial Refueling Squadron)	X		
VAW (Carrier Airborne Early Warning Squadron)	X		
VC (Fleet Composite Squadron)	X		1
VF (Fighter Squadron)	X		
VR (Fleet Logistics Support Squadron)	X		
VFA (Fighter Attack Squadron)	X		
HM (Helicopter Mine Countermeasures Squadron)	X		
HS (Helicopter Antisubmarine Squadron)	X		
VP (Patrol Squadron)	X		
VFC (Fleet Composite Squadron)	X	-	1
HC (Helicopter Combat Squadron)	X		
CVW (Carrier Air Wing)	X		2
VAQ (Tactical Electronic-Warfare Squadron)	X		1
HSL (Helicopter Antisubmarine Squadron, Light)	X		
HAL (Helicopter Attack Squadron, Light)	X	-	1
<p>Notes</p> <ol style="list-style-type: none"> 1. Authorized to perform limited intermediate level maintenance on equipment that is peculiar to the mission of the activity/assigned aircraft as authorized by ACCs and the Naval Air Systems Command. Air Development Squadron Six is authorized to perform intermediate level maintenance while deployed on ice cap operations. Continental United States activities are directed to use the supporting IMA whenever possible. Duplication of facilities and equipment and expenditure of funds are not justifiable. 2. Wing commanders are responsible for coordinating all organizational level maintenance performed on or in support of all aircraft assigned to wing squadrons. Particular emphasis should be placed on areas where the various wing squadrons need the same maintenance facilities. 3. A dash (-) indicates limited ordnance maintenance responsibility for that particular level. 4. An "X" assigns maintenance responsibility for that particular level. 5. Blanks indicate no responsibility for that particular level. 			

Figure 2-3-4. Assigned Levels of Maintenance, Fleet and Squadron Units, Navy

Activity	Level		Note
	Organizational	Intermediate	
HMM - Marine Medium Helicopter Squadron	X		
HMH - Marine Heavy Helicopter Squadron	X		
HMLA - Marine Light Attack Helicopter Squadron	X		
MALS - Marine Aviation Logistics Squadron		X	3
VMFA - Marine Fighter Attack Squadron	X		3
VMA - Marine Attack Squadron	X		3
VMFA (AW) - Marine Fighter Attack Squadron (all weather)	X		3
VMAQ - Marine Tactical Electronic Warfare Squadron	X		3
VMGR - Marine Refueling/Transport Squadron	X		3
VMU - Unmanned Aerial Vehicle Units	X		
MALSEK - Marine Aviation Logistics Support Element, Kaneohe Bay, HI		X	
Notes 1. An "X" assigns maintenance responsibility for that particular level. 2. Blanks indicate no responsibility for that particular level. 3. Wing commanders are responsible for coordinating all organizational level maintenance performed on or in support of all aircraft assigned to wing squadrons. Particular emphasis should be placed on areas where the various wing squadrons need the same maintenance facilities.			

Figure 2-3-5. Assigned Levels of Maintenance, FMF Activity Aviation Designations, Marine Corps

Activity	Level		Note
	Organizational	Intermediate	
MCAS Cherry Point	X	X	2
MCAF Quantico			1
MCAS Iwakuni	X	X	2
MCAS Yuma	X	X	2
MCBH Kaneohe Bay	X	X	2
MCAS New River		X	1, 2
MCAS Tustin			1
MCAS Futenma	X	X	2
MCAS Beaufort	X	X	2
MCAS Camp Pendleton	X	X	1, 2
MCAS Miramar	X	X	2
Notes 1. Provides flightline service for transient aircraft. 2. Store and issue ordnance to tenant and deployed intermediate activities. 3. An "X" assigns maintenance responsibility for that particular level. 4. Blanks indicate no responsibility for that particular level.			

Figure 2-3-6. Assigned Levels of Maintenance, Non-FMF Activity, Marine Corps

2.3.7.1 Responsibilities and Functions of Marine Corps Air Station Weapons/Ordnance Department. The weapons department of a MCAS is responsible for the security, inventory, and accountability of ordnance and ammunition stored aboard the air station. Its functions include requisitioning, receiving, storing, and issuing ordnance and related items to tenant and deployed activities. It is not manned, organized or equipped to assemble or deliver ordnance to tenant activities. These functions are performed by Marine Aviation Logistics Squadrons (MALS).

2.3.7.2 Responsibilities and Functions of Marine Aviation Logistics Squadron Ordnance Division. The ordnance division of a MALS is responsible for providing I-level maintenance of airborne armament equipment, and O- & I-level maintenance of armament weapons support equipment. MALS functions closely parallel both the weapons division of an AIMD and a weapons department at a Naval Air Station. The ordnance division of a MALS requisitions ammunition from the ordnance/weapons department of an MCAS, and upon receipt, inspects, assembles and delivers the ammunition to the supported squadron aboard the air station. MALS also deploys with squadrons providing them full support at advanced bases and expeditionary airfields.

2.3.8 Objectives of Standard Organization

2.3.8.1 The Naval Ordnance Maintenance Management Program has been designed to provide standard organizations with explicitly assigned responsibilities. Such standardization shall ensure effective management within a framework of authority, functions, and relationships necessary to achieve improvements in performance, economy of operation, and quality of work. It is recognized that such objectives are not attainable by a manual of organizational structure alone. They are more readily attainable by the intelligent and dedicated efforts of all personnel engaged in ordnance work, completely integrated by the management control processes used in an effective, standard organization. A standard organization for maintenance and support activities, properly implemented, will materially aid in the accomplishment of the following objectives:

- a. Improved performance and training of ordnance personnel.
- b. Improved equipment and system readiness.
- c. Improved maintenance integrity and effectiveness for all material.

- d. Improved safety.
- e. Improved use of maintenance, manpower, and materials.
- f. Improved planning and scheduling of maintenance work.
- g. Improved management and evaluation of work performance.
- h. Improved quality of the end product.
- i. Improved attainment and retention of combat readiness.
- j. Continuity when weapons, equipment, or personnel are transferred between commands.

2.3.8.2 Organizational Structure. The organizational structure discussed in this chapter incorporates the basic span of control, proper alignment of functions and division of work, uniformity of assignments, and the delegation of authority commensurate with the assignment of responsibility.

2.3.8.3 Responsibilities of Line and Staff. A line relationship is a relationship which exists between seniors and their subordinates. The relationship may be identified as a direct supervisory relationship, involving work assignment to subordinates and appraisal of performance. The staff relationship is the relationship which exists between an "advisory" staff supervisor and a "production" line supervisor. Staff elements are designed to be integral elements of the organization, wholly concerned with the exercise of servicing and supporting production elements.

2.3.8.4 Use of Terms. The term "department" used throughout this instruction is a general term which applies fully to all weapons activities having a department head. In cases of maintenance activities assigned as divisions to other departments, division will be used in place of department; branch will be used in place of division; and sections in place of branches.

2.3.8.5 Organization Policy. Workcenters are designated functional areas to which ordnance personnel are assigned. Typical workcenters are ordnance production control, airborne armament equipment, weapons support equipment, munitions assembly and storage, ammunition stock recording, etc. A workcenter will be established for each functional area to which ordnance personnel may be permanently assigned in an organization. The quantity and designation of

workcenters will be based upon numbers of personnel, span of control, workload, schedules, and specific locations. Workcenters will be established for the lowest practicable level of supervision desired.

2.3.9 Organization and Responsibilities of Intermediate Maintenance Activities

2.3.9.1 An IMA comprises all departmental and organizational units responsible for providing intermediate level maintenance support ashore and afloat. Normally, an IMA consists of the AIMD, the supply department, the weapons department, the public works department (ashore), and the engineering department (afloat). As an integral part of the IMA, the AIMD is responsible for performing intermediate level maintenance functions on the aircraft and aeronautical equipment located at the ship or station supported.

2.3.9.2 The weapons department shall be organized similar to the AIMD to carry out its ordnance maintenance responsibilities. Figure 2-3-7 depicts a typical CV/CVN weapons operational organization.

2.3.9.3 Armament Weapons Support Equipment (AWSE) maintenance responsibilities and procedures affect the AIMDs (AWSE custodian) and the weapons departments (AWSE subcustodian) of naval air stations, aircraft carriers, and amphibious assault ships. It is intended that each maintenance task be performed at that level of maintenance which will ensure the best use of materials, manpower, and funding. On-equipment maintenance will be performed, to the extent capable, by the subcustodian. When AWSE maintenance is beyond the capability of the subcustodian, it will be accomplished by the department or activity more capable of completing the specific maintenance action. Normally, this will be the AIMD, engineering department, public works, naval aviation depot, or a commercial contractor.

2.3.10 Functions of Weapons Officer (Ashore). As head of the weapons department, the weapons officer manages the weapons department and is responsible to the commanding officer for the accomplishment of the department mission. Weapons officer duties, responsibilities, and authority include requirements to:

- a. Administer the operation of the weapons department.
- b. Employ sound management practices in the handling of personnel, facilities, material, and in-work flow methods.

- c. Define and delegate responsibilities; define and assign functions and operations in accordance with existing directives.

- d. Organize the weapons department and initiate requests for and make recommendations relative to changes concerning personnel, facilities, and equipment required to accomplish assigned tasks.

- e. Ensure the accomplishment of training for both permanently and temporarily assigned personnel.

- f. Analyze the mission accomplishment and capabilities of the weapons department using reports provided by the maintenance data system on a continuing and progressive basis.

- g. Ensure full and effective employment of assigned weapons personnel.

- h. Ensure that the productive output of the weapons department is of the proper quantity and quality.

- i. Maintain liaison with other department heads, representatives of higher authority, and other weapons organizations.

- j. Publish and ensure internal compliance with maintenance, safety, and security procedures to ensure that optimum performance is achieved.

- k. Schedule and hold periodic planning and/or information meetings for all assigned officers and senior petty officers.

- l. Provide data analysis to superiors in the chain of command, where required, to show utilization of manpower, equipment, and facilities.

- m. Obtain that support equipment required to carry out the mission of the weapons department and to maintain storage, operation, and inspection of AWSE.

- n. Contribute to the product improvement program.

- o. Administer and monitor the conventional ordnance qualification and certification program.

- p. Supervise and direct the procurement, handling, storage, accountability, and issue of ship and aircraft ammunition.

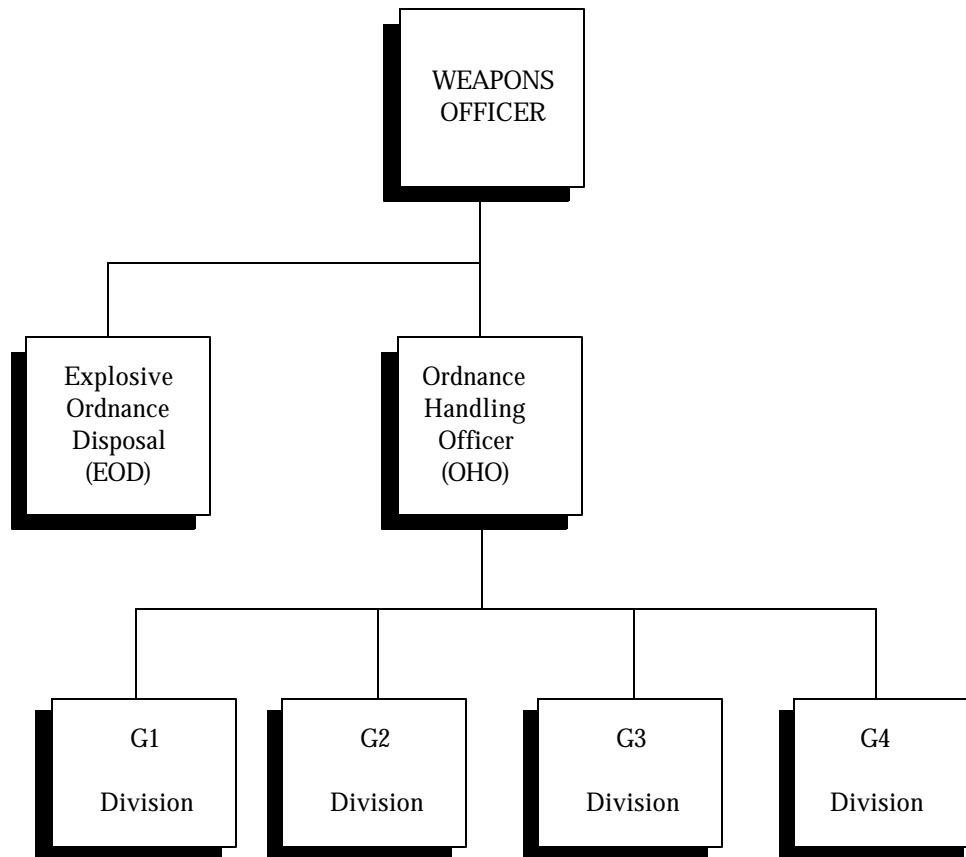


Figure 2-3-7. Typical (CV/CVN) Weapons Department Operational Organization

2.3.11 Functions of Weapons Officer (Afloat). Afloat weapons departments shall accomplish those management, staff, and production functions applicable to shore activities even though the organizational structure is somewhat changed. The weapons officer is responsible to the commanding officer for the supervision and direction of the employment and maintenance of AWSE for the ship, and the procurement, handling, storage, and issue of all ammunition. Weapons officer duties, responsibilities, and authority include requirements to:

- a. Supervise and direct the operation, care, and maintenance of the ship's armament and magazine spaces.
- b. Supervise and direct the procurement, handling, storage, accountability, and issue of ship and aircraft ammunition.
- c. Conduct periodic inspections of magazines and sprinkler systems using NAVSHIPS 0348-077-1-1000 instruction (NOTAL).
- d. Maintain the physical security and integrity of magazines and ready storage spaces, including the control of assigned keys.
- e. Provide storage for all ammunition. Where applicable, supervise maintenance, test, and assembly of munition components and related equipment.
- f. Ensure the training of all personnel assigned to the weapons department in the handling, storage, characteristics, and safety precautions for all ammunition embarked.
- g. Provide required space for explosive ordnance disposal equipment and publications and supervise the explosive ordnance disposal team when embarked.
- h. Administer and monitor the conventional ordnance qualification and certification program.
- i. Perform other such duties as may be assigned.
- j. Review outstanding ship alterations and submit recommendations on those concerning the weapons department.

2.3.12 Naval Air Training and Marine Corps Air Reserve Training Command Squadrons and Units. These

activities are responsible for performing the levels of ordnance maintenance designated in figure 2-3-8.

2.3.13 Target Division Responsibilities

2.3.13.1 Functions. The target division (aerial or surface), when established, is responsible for the following functions:

- a. Supervising, coordinating, and completing periodic maintenance, inspections, decontaminations, and rehabilitation of assigned targets. Crew leaders and such other personnel as designated by the maintenance officer will be permanently assigned. Additional personnel will be made available as required from other divisions.
- b. As directed by the maintenance officer and in conjunction with other production divisions, performing applicable organizational and selected intermediate level maintenance functions in those areas outlined in volume II section 5.
- c. Advise maintenance control continuously of the status of work in progress.
- d. Ensure cleanliness of hangar and assigned spaces.
- e. Nominate qualified personnel for designation as collateral duty inspector.
- f. Initiate requests for material required for doing assigned tasks.
- g. Assume custody of tools and support equipment assigned to the division.
- h. Interpret applicable directives and preparing maintenance instructions, in draft form, to implement such directives.
- i. Recommend changes in techniques to promote ground safety, flight safety, and material readiness of assigned targets.
- j. Carry out an active foreign object damage prevention program.
- k. Initiate requests to maintenance control for unscheduled maintenance.
- l. Provide target loading and launching crew members and supervisors.

Activity	Level		Note
	Organizational	intermediate	
VT/VMAT/VMFAT (Training Squadron)	X	-	1
HT/HMT (Helicopter Training Squadron)	X	-	
NAMTRAGRUDETs (Naval Air Maintenance Training Group Detachment)	X	-	
NATTC (Naval Air Technical Training Center) Pensacola	X	-	2
NAR (Naval Air Reserve)	X	-	3
MAG (Marine Air Group) VMA/VMF, etc.	X	-	3
<p>Notes</p> <ol style="list-style-type: none"> 1. The Maintenance Training Units of NAMTRAGRUDETs perform organizational level maintenance on assigned aircraft and related support equipment used for training in support of technical schools. Local HOST AIMDs perform intermediate level maintenance on NAMTRAGRUDET aircraft and related support equipment. Equipment found beyond the capability of the HOST AIMD will be returned to that NAMTRAGRUDET for processing. 2. The Equipment Maintenance Unit of NATTC Pensacola perform organizational and limited intermediate level maintenance on support equipment used in support of technical training. Intermediate level maintenance beyond the capability of NATTC Pensacola is arranged with the closest capable facility. 3. Navy/Marine air reserve aviation squadrons perform organizational level maintenance on assigned aircraft during active duty for training periods or cruises, and when activated and assigned to fleet control. During regular monthly drill periods, these squadrons perform maintenance which varies with training requirements and schedules published by the TYCOM and the parent activities. 4. A dash (-) indicates limited ordnance maintenance responsibility for that particular level. 5. An "X" assigns maintenance responsibility for that particular level. 6. Blanks indicate no responsibility for that particular level. 			

Figure 2-3-8. Assigned Levels of Maintenance, Navy and Marine Training and Reserve Units

m. Expedite the accomplishment of assigned work.

n. Maintain support equipment in accordance with programs and procedures in volume II.

o. o. Carry out an effective corrosion prevention and control program.

2.3.13.2 Organization and Responsibilities

2.3.13.2.1 Figure 2-3-9 shows the standard target maintenance department organization for naval activities assigned the operation and maintenance of targets. All such activities are assigned organizational and limited intermediate level maintenance responsibilities. Squadrons assigned both targets and aircraft are authorized to combine intermediate level maintenance functions in circumstances where it is practical and economically advantageous.

2.3.13.2.2 Management Responsibilities. The management responsibilities of the target maintenance officer, assistant target maintenance officer, division officers, branch officers, and workcenter supervisors are essentially identical to those of their aircraft maintenance counterparts as prescribed by OPNAVINST 4790.2H (NOTAL).

2.3.13.2.3 Staff Functions. The responsibilities of Quality Assurance (QA) are as described in the following paragraphs, and closely parallel those duties outlined in volume I, chapter 14 of OPNAVINST 4790.2H (NOTAL), Naval Aviation Maintenance Program, for QA Department in an aircraft maintenance activity.

2.3.13.2.4 The permanently assigned QA officer is responsible for conducting and managing the target division QA effort. While it is recognized all the functions of QA as described in this chapter may not be appropriate in some target activities, the basic precepts of ensuring quality workmanship prevail. QA provides a systematic and efficient method for gathering, analyzing, and maintaining information on the quality characteristics of products, the source and nature of defects, and their immediate impact on the current operation. It permits decisions to be based on facts rather than intuition or memory and provides comparative data which is useful long after the details of the particular time or events have passed. The objective of QA is to readily pinpoint problem areas in which management can:

a. Improve the quality, uniformity, and reliability of the total maintenance effort.

b. Improve the work environment, tools, and equipment used in the maintenance effort.

c. Eliminate unnecessary man-hour and dollar expenditures.

d. Improve training, work habits, and procedures of maintenance personnel.

e. Increase the excellence and value of reports and correspondence originated by maintenance personnel.

f. Effectively disseminate technical information.

g. Establish realistic material and equipment requirements in support of the maintenance effort.

h. Support the Naval Aviation Maintenance Discrepancy Reporting Program (NAMDRP).

i. Support the Foreign Object Damage (FOD) Prevention and Reporting Program.

2.3.13.2.5 QA is a staff function which requires both authority and assumption of responsibility. Direct liaison between QA and production personnel is necessary and must be energetically exercised. Although the QA officer is responsible to the target division maintenance officer for the overall quality of maintenance within the division, work center supervisors are duly responsible for ensuring required inspections are conducted and high quality workmanship is attained. Specific quality assurance responsibilities are to:

a. Maintain the central technical publications library (CTPL) for the division, including technical directives (TDs), control classified technical publications for the division, and ensure each dispersed technical publication library receives all publications applicable to each work center and these are kept current and complete.

b. Review all engineering investigation (EIRs) requests, product quality deficiency reports (PQDRs), technical publications deficiency reports (TPDRs), hazardous material reports (HMRs), explosive mishap reports (EMRs), and conventional ordnance deficiency reports (CODRs) to ensure they are accurate, clear and concise prior to submission.

c. Monitor inspections of precision measuring equipment (PME) to ensure compliance with calibration intervals and safety instructions.

d. Perform inspections of all maintenance equipment and facilities to ensure compliance with fire and safety regulations. Check for the existence of satisfactory environmental conditions within the work spaces and assure equipment is maintained in a safe operating condition. Check for equipment operator qualifications and ensure proper training for licensing is maintained.

e. Provide a continuous training program in techniques and procedures pertaining to the conduct of inspections. When directed or required, provide technical support to study trouble areas and submit recommendations for corrective action.

f. Use information from Maintenance Data Reports (MDRs) in developing discrepancy trends to identify failure areas or other maintenance problems.

g. Review source documents and periodic inspection records, and note recurring discrepancies requiring special action.

h. Obtain and use inspection equipment, such as lights, borescopes, mirrors, magnifying glasses, tensionmeters, pressure gauges, and carbon monoxide testers. Ensure production personnel have such equipment available, in operating condition, calibrated if applicable, and in use.

i. Ensure established standard procedures are observed for conducting scheduled and unscheduled inspections, ground tests, and bench check of components, including engines. Periodically accompany check crews during inspections to ensure the desired quality level is obtained.

j. Ensure the configuration of targets and components is correct and all essential modifications have been incorporated. This requires reviewing appropriate logbooks and records.

k. Ensure the configuration of target support equipment (SE) is correct and all essential modifications have been incorporated.

l. Ensure an inspection is conducted on all equipment received for use, returned for repair, or held awaiting repair to verify satisfactory material condition, identification, packaging, preservation, and configuration; and when applicable, shelf-life limits are not exceeded.

m. Review all incoming technical publications and directives to determine their application to the targets division.

n. Prepare or assist in the preparation of Maintenance Instructions (MIs) to ensure QA requirements are specified.

o. Comply with other assigned responsibilities, and perform mandatory QA inspections as specified in Maintenance Instruction Manuals (MIMs), TDs, MIs, and those inspections required to be conducted by QA personnel during and upon completion of a maintenance action.

2.3.13.2.6 Target Department Safety. QA is assigned overall responsibility for target division safety. The intent is not

to conflict with any portion of the activity's overall safety program but to assist in coordination of the total safety effort. These responsibilities are to:

a. Disseminate safety posters and literature.

b. Report all hazards, mishaps, and unsafe practices in the department.

c. Conduct safety meetings within the department, at least monthly.

d. Coordinate with the host activity safety officer.

e. Participate in the activity's safety surveys and stand downs.

2.3.13.2.7 Naval Aviation Maintenance Discrepancy Reporting Program responsibilities:

NAMDRP is the method by which hazardous deficiencies in material and publications, substandard workmanship, and improper QA procedures are reported. QA is responsible for managing the NAMDRP. They will assist work centers in determining if one or more reports are needed for any maintenance centers in determining if one or more reports are needed for any maintenance problem or situation occurring in the activity and review all HMRs, EI requests, PQDRs, and TPDRs to ensure they are accurate, clear, concise, and comprehensive. Explosive systems are reported as an EMR or a CODR. Correspondence, reports, or requests involving the management of the NAMDRP shall be reviewed by the QA officer. NAMDRP procedures and formats are provided in volume I, chapter 4.6 of this instruction.

2.3.13.2.8 Foreign Object Damage (FOD) Prevention Program. QA will ensure:

a. A FOD Prevention Program is described in volume I, of OPNAVINST 4790.2H.

b. All instructions pertaining to FOD prevention issued by the FOD prevention officer are complied with.

c. All work centers have initiated FOD prevention procedures which comply with applicable instructions and the FOD prevention and safety relationship is adequately addressed. Evaluation of FOD prevention measures shall be included in all audits.

d. Maintenance methods and procedures support the FOD Prevention Program.

e. The FOD prevention officer is aware of FOD related problems.

f. Contractor and field maintenance teams are briefed regarding the command's FOD Prevention Program require-

ments and disparities are reported to the FOD prevention officer.

2.3.13.2.9 Production Functions. Responsibilities for the maintenance or material control officer, maintenance control as required to support the bi-level maintenance capability are as described in the following paragraphs, and closely parallel those duties as outlined in volume I, of OPNAVINST 4790.2H.

2.3.13.2.10 The target division maintenance officer is responsible for the accomplishment of the division's mission. The maintenance officer shall:

- a. Administer the operation of the target division per existing directives.
- b. Define and assign responsibilities, functions, and operations per existing directives.
- c. Organize the division and initiate requests for, and make recommendations relative to, changes concerning personnel, facilities, and equipment required to accomplish assigned tasks.
- d. Ensure the accomplishment of training for permanently and temporarily assigned personnel.
- e. Analyze the mission accomplishment and capabilities of the division and ensure timely planning is conducted and a statement of requirements to meet future needs is initiated, using reports provided by the Maintenance Data System (MDS), on a continuous and progressive basis.
- f. Ensure full and effective employment of assigned personnel.
- g. Ensure the production output of the division is of proper quantity and quality per applicable specifications and directives.
- h. Maintain liaison with other division officers, representatives of higher authority, and other maintenance organizations.
- i. Publish and ensure internal compliance with maintenance, safety, and security procedures to ensure optimum performance is achieved.
- j. Schedule and hold periodic planning and information meetings.
- k. Ensure the monitoring of all maintenance programs, for example, fuel, hydraulic, and oil contamination,

FOD, corrosion control and non-destructive inspection (NDI).

- l. Ensure the individual material readiness list (IMRL) is frequently reviewed and necessary changes are submitted, accurate equipment records are maintained, and required reports are submitted.

- m. Ensure applicable publications and directives are disseminated throughout the division.

2.3.13.2.11 The maintenance officer, in addition to the above functions, will:

- a. Designate a target division FOD prevention officer.
- b. Designate, in writing, quality assurance representatives (QARs), collateral duty quality assurance representatives (CDQARs) and collateral duty inspectors (CDIs).
- c. Approve Maintenance Instructions (MIs).
- d. Review completed work center audits.
- e. Direct all logbook/record entries and sign or designate another person to sign.
- f. Establish delivery/pickup points for material as mutually agreed upon by the supply department.

2.3.13.2.12 The maintenance material control officer (MMCO) shall:

- a. Coordinate and monitor the division workload.
- b. Maintain liaison with supporting activities and the supply department, to ensure requirements and workload are known and satisfied.
- c. Control daily workload and assign work priorities to ensure efficient movement of components through the division. Where physically possible, maintenance/production control will have intercom capability, independent of telephones.
- d. Prepare required MIs to ensure adequate communication and control.
- e. Review MIs, planned maintenance system (PMS) publications, and local maintenance requirements cards and ensure compliance.
- f. Ensure the full capability of the division is used in supporting the division workload.
- g. Maintain TD control procedures for the division. Initiate TD compliance's, ensure required material is ordered, and schedule timely incorporation of TDs.

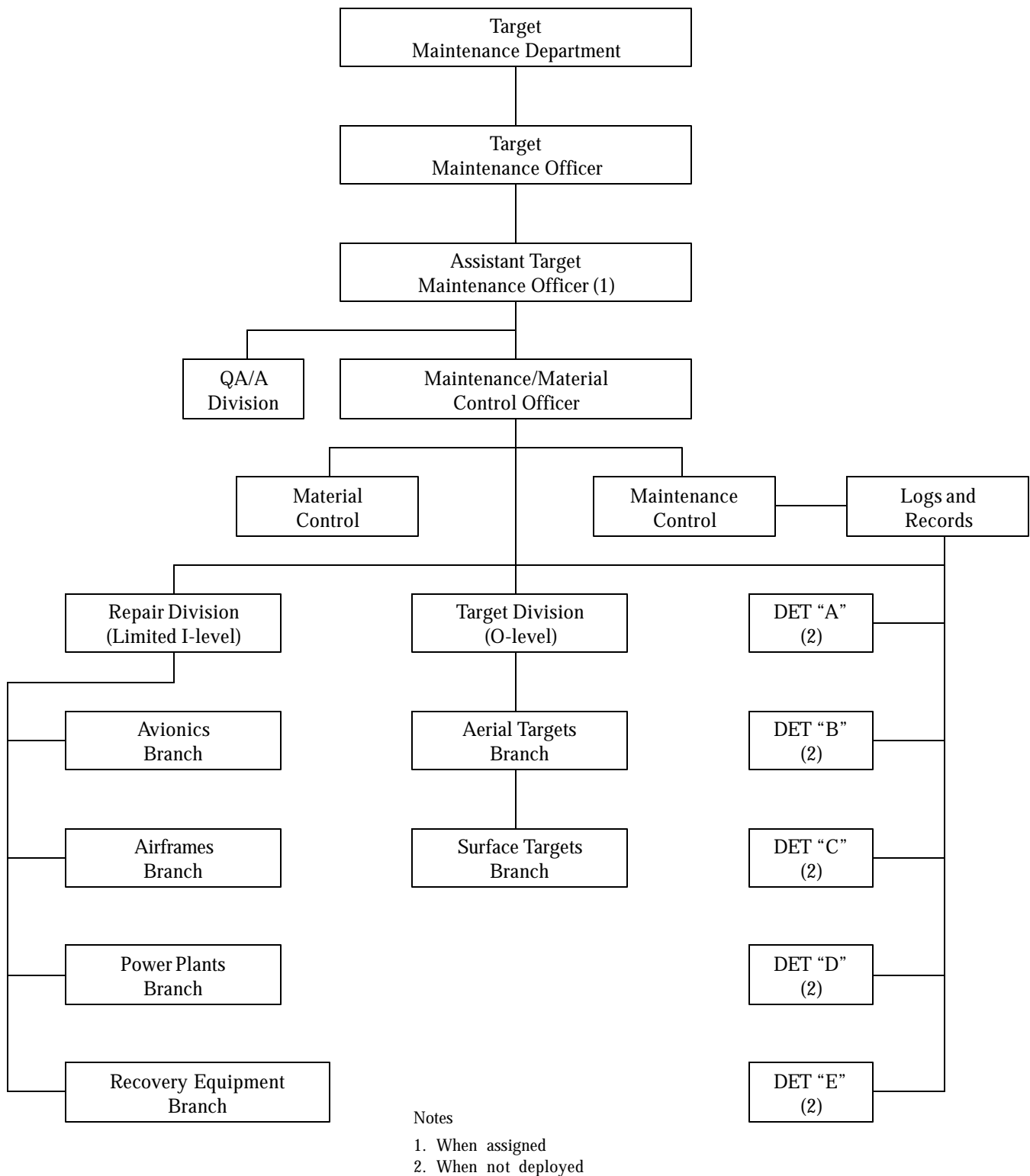


Figure 2-3-9. Standard Organizational (Limited Intermediate) Level Target Maintenance Department

SECTION 3

Airborne Weapons Performance Evaluation and Reporting Program

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CHAPTER 3.1

Introduction

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CHAPTER 3.1

Introduction

3.1.1 General. This section discusses the airborne weapons performance evaluation and reporting program and covers the Missile Assist Team (MAT) program.

3.1.2 Scope. This section covers the criteria for the performance evaluation and reporting program and the role of the MAT.

3.1.3 Airborne Weapons Performance Evaluation and Reporting Program

3.1.3.1 The weapon systems performance program provides firing histories, success rates, incident rates, kill probabilities, and mean time between failure rates. The three reports used to develop this data are the captive carry report, the squadron firing report, and the weapon system analysis report. Guidelines of filling out these reports are provided in chapter 3.2.

3.1.3.2 Primary MAT objectives are to identify reasons for poor performance of missiles or weapon systems, and secondary objectives are to assist squadrons in missile exercises, recommend problem solutions, effect data analysis, and increase training. MATs support air-to-air and air-to-surface missile firing exercises. Detailed MAT functions and composition are provided in chapter 3.3.

3.1.4 Conventional Ordnance Performance Evaluation Program (COPE)

3.1.4.1 The primary COPE objectives are to provide an accurate measure of conventional ordnance performance during live ordnance evolutions and identify hardware deficiencies which degrade the performance of the hardware and weapons systems. Secondary objectives include assisting squadrons during these ordnance evolutions, providing recognition of problems which might otherwise not be subject to reporting requirements, gathering data to provide a histor-

ical base for assessment of weapons system performance, and analyzing the data to identify systematic problems within the weapon systems. Detailed COPE functions and structure are provided in chapter 3.4.

3.1.5 JDAM Surveillance Performance. JDAM is a joint program where performance is verified by surveillance. This will be accomplished in two parts. Part one (three sections):

a. Weapon expenditure will be accomplished by both the Navy and the Air Force. The Air Force has a program called "Weapon System Evaluation Program" (WSEP). The Air Force intend to expend 50 units each year. These units will be instrument with special telemetry packages contained in the tail assemblies.

b. A total of 50 units designated as Navy Non-Combat Expenditure Allocation (NCEA). (Break out of this NCEA is to-be-determined).

c. 150 units will be designated as training.

3.1.5.1 Part two of this program will be an Air Force initiative where they will build for ready storage 800 units yearly. These units are BIT-tested prior to build-up and then tested once yearly for 5 years.

JDAM does not intend to utilize the following:

- a. Captive carry events with captive carry log.
- b. Missile firing reports.
- c. Missile assist teams.
- d. Conventional Ordnance Performance Evaluation (COPE).

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CHAPTER 3.2

Performance Evaluation and Reporting Program

3.2.1 General. This chapter addresses the airborne weapons Performance Evaluation and Reporting Program and explains how it is used to document and analyze data to measure weapon performance. Uniform procedural instructions are included for utilization of Missile Assist Teams (MAT) during scheduled weapon exercises.

3.2.2 Purpose. The purpose of this chapter is to establish a program to evaluate and improve airborne weapon and aircraft weapon system effectiveness.

3.2.3 Airborne Weapons Performance Evaluation and Reporting Program Elements

3.2.3.1 Weapon system performance data is collected and compiled for specified airborne weapon captive carry events and firing attempts conducted by Navy and Marine Corps squadrons. Data is collected for both weapons and the supporting aircraft subsystems.

3.2.3.2 A captive carry event occurs whenever a missile is loaded on a launcher station and the aircraft becomes airborne. Weapon system performance during captive carry events shall be reported using the Airborne Weapons Captive Carry Log (figure 3-2-1). This reporting requirement applies to all missile configurations of the following weapon systems having an active guidance/control group or section (e.g., AIM, AGM, ATM, NATM, and CATM):

	<u>Air-to-Air</u>
PHOENIX	(AIM-54C versions only)
AMRAAM	(AIM-120 versions)
SIDEWINDER	(AIM-9M versions only)
SPARROW	(AIM-7M versions only)

	<u>Air-to-Surface</u>
HARPOON	(AGM-84 versions only)
HARM	(AGM-88B, AGM-88C versions)
MAVERICK	(AGM-65E, AGM-65F versions)
PENGUIN	(AGM-119B version)
SLAM/SLAM ER	(AGM-84E/H version)
WALLEYE	(DPSK and ERDL versions only)
SIDEARM	(AGM-122A versions)
LGB/GBU	(All Variants)
JSOW	(AGM-154 versions)

NOTE

HARM Missile AGM-88C (NALC PU06/WF22) captive carry a maximum of 250 hours shall be placed in Condition Code J and returned to a Maintenance/Depot Activity.

NOTE

JSOW has a Cats/Traps Limitation as follows: AGM-154A, AGM-154B, AGM-154C All NALC's 50 Cats/Traps. All JSOW weapons will be placed in condition Code "B" when 40 Cats/Traps have been logged. Flight limitations are as follows: AGM-154A, AGM-154B, AGM-154C all NALC's 300 hours

3.2.3.3 The squadron ordnance officer is responsible to maintain airborne weapons captive carry log (Para 3.2.3.2/Fig. 3-2-1). Captive carry logs (OPNAV Form 8000/5) will be returned to the cognizant Weapons Department/MALS monthly. Copy will be retained in the missile logbook. The Weapons Department/MALS ordnance officer is responsible for forwarding original captive carry logs to Commander, Naval Air Warfare Center Weapons Division, Attn: Code 362300E (AWARS), 575 I Avenue, Suite 1, Point Mugu, CA 93042-5049 monthly.

3.2.3.4 Airborne Weapons System Firing Reports. (AWFR) A missile firing attempt begins when a specified missile is loaded on an aircraft and the aircraft becomes airborne with an intent to launch. The results of firing attempts during combat missions, weapon system verification exercises, and follow-on tests and evaluations are of special interest and are reported using the Airborne Weapons System Firing Report format in figure 3-2-2 for those weapons listed in appendix G. The preferred method for submission of HELLFIRE, TOW, and MAVERICK firing reports is via the internet utilizing the firing report form provided on the CNO Redshirt Web page (URL <http://143.113.200.54/Redshirt/shirt1.htm>). Activities/units without access to the Web version of the firing report may use the appropriate

AIRBORNE WEAPONS CAPTIVE CARRY LOG												
SHIP or STATION:		SQUADRON:		WEAPON TYPE: (NOTE 2)		WPN SER NO:		NALC:				
	(NOTE 1) FLIGHT DATE	EVENT	AIRCRAFT BUNO.	ACFT TYPE	STA	(NOTE 1) UPLOAD DATE	FLIGHT HOURS	CAT TRAP	(NOTE 3) WPN CHECK S OR U	(NOTE 1) DOWN- LOAD DATE	(NOTE 4) E T I READ- ING	(NOTE 5) DOWN- LOAD CODE
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												
12												
13												
14												
15												
16												
REMARKS								(REMARKS CONTINUED REVERSE SIDE)				

OPNAV 8000/5 (4-99)

NOTES:

- All Dates Are To Be JULIAN.
- Enter weapon type as AGM-88B, AGM-88C, ATM-88, NATM-9M, CATM-9M-8, etc.
- If "WPN CHECK" is UNSAT, remarks amplifying problem are mandatory.
- Elapsed Time Indicator readings are required at each download for HARM missiles or any missile with an ETL.
- Download Codes:

MSF - Weapon Malfunction	EOF - End of Flight OPS	S - Satisfactory
WSF - WCS Malfunction	ACM - Aircraft Maintenance	U - Unsatisfactory
MMC - Mission Complete	NDL - Not Downloaded	
- Return Captive Carry Logs to Weapons Department/MALS monthly.
- Weapons Department/MALS Ordnance Officer return Captive Carry Log to cognizant FST every thirty-days:

Original To: COMMANDER (ALL MISSILES)
 NAVAL AIR WARFARE CENTER WEAPONS DIVISION
 CODE-362300E
 575 I Avenue Suite 1
 POINT MUGU CA 93042-5049

(JSOW Captive Carry Only) An additional copy of JSOW captive carry log will be submitted to:
 COMMANDER
 NAVAL AIR WARFARE CENTER WEAPONS DIVISION
 CODE-47HJOOD
 1 ADMINISTRATION CIRCLE
 CHINA LAKE, CA 93555-6001
- Cognizant Weapons Department or MALS (Copy to be recorded in the Missile Log book)
- The Airborne Weapons Captive Carry Log may be reproduced locally on a 5x8 card.

Figure 3-2-1. Airborne Weapons Captive Carry Log

FM FIRING ACTIVITY **(AIRCRAFT SQUADRONS ONLY)**

TO COMNAVAIRSYSCOM PATUXENT RIVER MD //AIR-3.1.1/AIR-3.1.3//
 NAVAIRWARCENWPNDIV PT MUGU CA//321200E/362300E/471M00E/4KMEE0E/4KM200E//
 APPROPRIATE TYPE COMMANDS AS FOLLOWS: **(ALL OTHERS INFO)**
 COMNAVAIRLANT NORFOLK VA //N85//
 COMNAVAIRPAC SAN DIEGO CA //N85//
 COMMARFORLANT //ALD-D//
 COMMARFORFPAC //ALD-D//
 COMMARFORRES//ALD-D//
 COMNAVIAIRESFOR NEW ORLEANS LA//N3W//
 COMNAVSURFLANT NORFOLK VA//N423//
 COMNAVSURFPAC SAN DIEGO CA //N881//
 COMOPTEVFOR NORFOLK VA//50//51//

INFO CNO WASHINGTON DC//N781C8//
 CMC WASHINGTON DC//ASL30//
 CINCLANTFLT NORFOLK VA //N411//
 CINCPACFLT PEARL HARBOR HI //N42//
 CINCUSNAVEUR LONDON UK //N411//
 OPERATIONAL CHAIN OF COMMAND **(I.E. CAG, MAW, SHIP, CARGRU, CBG,)**
 COMSIXTHFLT, COMSECONDFLT, COMSEVENTHFLT, COMTHIRDFLT, **(AS APPROPRIATE)**
 COMSTRKFIGHTWING,COMFITWING,COMVAQWING,COMPATRECONFOR, **(AS APPROPRIATE)**
 COMNAVAIRWARCENWPNDIV CHINA LAKE CA//311200D/47HE00D/47HJ00D// **(JDAM/JSOW)**
 AAC EGLIN AFB FL//YAL/259ML// **(AMRAAM)**
 NAVAMMOLOGCEN NALC INDIAN HEAD MD//N41//
 NAVAMMOLOGCEN NALC MECHANICSBURG PA//41//
 AIRTEVRON CHINA LAKE CA//C10//
 RANGE ACTIVITY INVOLVED IN MISSILE EXERCISE
 FLECOMRON SQUADRON INVOLVED IN MISSILE EXERCISE
 MARINE CORPS PROGRAMS FALLBROOK CA//40911// **HELLFIRE/TOW/MAVERICK ONLY)**
 CDRAMCOM REDSTONE ARSENAL AL//AMSAM-RD-QA-RA// **(HELLFIRE ONLY)**

CONFIDENTIAL // N08010// (SECRET/NOFORN IF DESCRIBING SPECIFIC TARGET COUNTERMEASURES)

MSGID / GENADMIN / **(DRAFTER) (DOUBLE SLANT)**

SUBJ AIRBORNE WEAPON SYSTEM FIRING REPORT (U)

REF/A./DOC/OPNAVINST 8000.16
 NARR/REF IS NAVAL ORDNANCE MAINTENANCE MANAGEMENT PROGRAM//

1. COMNAVAIRSYSCOM FOR AIR-3.1.1 AND AIR-4.1.4, ADDITIONAL PASSING INSTRUCTIONS AS APPROPRIATE.
2. IN ACCORDANCE WITH REF A, THE FOLLOWING AIRBORNE WEAPON SYSTEM FIRING REPORT IS SUBMITTED:
 - A. EVENT PARAMETERS: MSL A, MSL B, MSL C . . . MSL F
 (1)-(95) EVENT PERFORMANCE DATA FOR THE SPECIFIC WEAPONS LISTED IN
 APPENDIX G TO REFERENCE A.

DECL **(DD/MMM/YY) (DOUBLE SLANT)**

NOTE 1: INSERT THE DATE (WHICH MUST BE LESS THAN 10 YEARS FROM THE ORIGATION DATE OF THE MESSAGE) FOR DECLASSIFICATION.

Figure 3-2-2. Airborne Weapon System Firing Report Message Format

form provided in appendix "G" and mail the completed form to the addresses provided. Submission of an unclassified message utilizing the data elements from appropriate missile firing report is also an option. If a message report is submitted the message addresses provided in Appendix "G" should be used. Copies of heads up display video and any other pertinent data influencing evaluation of the firing attempt should be provided to the Commander, Naval Air Warfare Center Weapons Division, Attn: Code 362300E (AWARS), 575 I Avenue, Suite 1, Point Mugu, CA 93042-5049, except follow-on test and evaluation attempts which will be forwarded to AIRTEVRON NINE (Code C10).

NOTE

All firing activities (Navy or Marine Corps Aircraft squadrons) will report airborne weapons firings or attempt to fire. Submitting a CODR or EMR does not relieve the reporting command from the requirement for submitting a firing report.

3.2.3.5 Telemetry and other weapon system evaluation equipment will be utilized whenever possible on specified weapons during weapon firing exercises. However, this criterion does not preclude the firing of tactical (warhead) rounds which also provide information on weapon performance. Programs have been implemented to develop telemetry equipment capable of assessing fleet airborne weapon expenditures in all operational environments. Telemetry systems and associated equipment should be suitable to distinguish between weapons and airborne weapon control system problems.

3.2.3.6 Problems detected and reported during Navy and Marine Corps squadron firing exercises and combat missions are tracked through final resolution by the Airborne Weapons Corrective Action Program discussed in volume I, sections 4 and 5.

3.2.3.7 Provisions have been made to assemble, coordinate, and store weapon system performance and failure data. Compilation of this data begins with the selection of weapons to be uploaded onto an aircraft for a weapon exercise or combat mission and continues through weapon expenditure and target damage assessment or mission abort.

3.2.3.8 Summarized analyses of weapon system evaluation data are reported to fleet commands, type commands, program managers, development and in-service engineering activities, and other activities. In addition to providing historical data, these analyses establish weapon system performance trends and highlight key failure categories. Such reports shall be distributed so that cognizant commands may

resolve problems for each weapons system at the earliest possible stage of the logistics cycle.

3.2.4 Responsibilities

3.2.4.1 Naval Air Systems Command. In support of the performance evaluation and reporting program, the Naval Air Systems Command performs the following:

- a. Manages the Airborne Weapons Performance Evaluation and Reporting Program (AIR-3.1.1).
- b. Identifies telemetry requirements to provide performance analysis data to be gathered in fleet weapon verification exercises (AIR-3.1.1).
- c. Coordinates failure analysis reporting generated by this program, including action assignments, to ensure proper execution of maintenance engineering related efforts as well as identification of design deficiencies (AIR-3.1.1).
- d. Establishes evaluation and scoring criteria, including the definition of terms to be used in evaluating the performance of airborne weapons (AIR-4.1.4).
- e. Develops design changes to correct airborne weapon performance deficiencies based on performance data evaluation (AIR-4.1.4).

3.2.4.2 Type Commanders. Type commanders perform the following:

- a. Assure participation by Navy and Marine Corps squadrons in the Airborne Weapons Performance Evaluation and Captive Carry Reporting Program.
- b. Provide recommendations to the Naval Air Systems Command (AIR-3.1.1) to ensure that changing fleet requirements are properly reflected in this program.

3.2.4.3 Naval Air Warfare Center Weapons Division. The Naval Air Warfare Center Weapons Division performs the following:

- a. Provides an operational analysis of each Navy and Marine Corps firing exercise observed by a MAT to assess weapon system performance.
- b. As deficiencies are identified, provides recommendations for remedial action to correct deficiencies.
- c. Collects, stores and analyzes captive carry data reported by operational users.
- d. Provides reports and recommendations to headquarters and fleet commands on captive carry contents.

e. Collects, stores, and analyzes airborne weapon firing data from fleet training exercises or weapon expenditures.

f. Provides reports and recommendations to headquarters and fleet commands on firing evaluations.

3.2.4.4 The Aviation Squadron, Aircraft Intermediate Maintenance Department (AIMD), Marine Aviation Logistics Squadron (MALS), Marine Corps Air Station (MCAS) Ordnance Branch, and Naval Air Station (NAS) Ordnance/Weapons Department shall submit CODR, EMR, EIR, PQDR (Cat I and II), and TPDR (Cat I and II) as required to support the performance evaluation and reporting programs.

3.2.4.5 The AWFR will be reported via naval message (Fig. 3-2-2/Appendix G) by the firing activity within forty-eight (48) hours of weapon expenditure. The squadron ordnance officer will provide the following in support of Appendix G event parameters: (5) aircraft type/model/buno, (8) station loaded, (9) weapon type/model/serno, (59) weapon configuration and (62) data pod SERNO (as applicable) to the squadron operations department at the completion of the daily flight schedule. The squadron operations officer is responsible for the completion and submission of the remaining data elements in the AWFR for each weapon expended.

CHAPTER 3.3

Missile Assist Team Program

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CHAPTER 3.3

Missile Assist Team Program

3.3.1 Missile Assist Team Program Elements

3.3.1.1 Missile Assist Teams (MAT) will support the airborne weapons performance evaluation and reporting program by assisting Navy and Marine Corps squadrons during scheduled weapon firing exercises at the request of the Type Commanders.

3.3.1.2 MATs will provide specific assistance in the planning, preparation, and analysis of air launched guided weapon firing exercises. The intent is to maximize training benefits from weapon expenditures by maintenance and aircrew personnel and to ensure accurate assessment of the material readiness of the weapon systems.

3.3.1.3 MATs will assist in the evaluation of missile and launcher performance, identify potential operational problems in the weapon system, and provide squadron, type, and functional wing commanders with a valid assessment of firing results.

3.3.1.4 MAT assistance is provided solely in the interest of improving tactical aircraft weapon system effectiveness and shall not be considered an inspection.

3.3.1.5 A review of weapon firing summaries over past years shows a high percentage of unsuccessful firings attributed to weapon failure. The results of this review do not correlate with weapon design reliability or stockpile test sampling. MATs will be concerned with the total weapon system, including platform fire control, aircrew, maintenance personnel, and airborne weapon.

3.3.1.6 MATs will attempt to identify the causative factors in each case of poor weapon system performance through analysis of available firing data, including telemetry analysis and observation of preoperational and postoperational system checks.

3.3.1.7 MATs will function in such a way as to provide maximum benefit to the squadron, to assist in weapon system checks, to advise of recommended changes in procedures, and to provide factual reports of total weapon system performance upon completion of the exercise.

3.3.1.8 MATs are normally composed of missile and aircraft systems engineering and technical specialists and a model manager representative. The composition will be dependent upon the weapons and aircraft involved.

3.3.1.9 In the event that an aircraft returns from a mission in which an airborne weapon fails to launch or guide, that aircraft will be made available to the MAT for an investigation to determine cause. The squadron will provide the aircraft and maintenance personnel to enable complete postoperation system checks and troubleshooting to be accomplished prior to next flight or nonassociated maintenance action.

3.3.1.10 The total intent of the aircraft impound is fault isolation in cases when the firing platform appears suspect. If the aircraft electronics integrity is interrupted by routine maintenance prior to postoperation troubleshooting, the probability of fault isolation is drastically reduced. The period of impound will be kept to a minimum.

3.3.1.11 After the exercise is complete, the team will make an informal report to the squadron commanding officer on the results of the analysis and will provide analysis notes to the Naval Air Warfare Center Weapons Division, (NAVAIRWARCENWPNDIV), cognizant functional, group, wing, and type commands.

3.3.2 MAT Structure. The MAT is an assemblage of NAVAIRWARCENWPNDIV, Fleet Weapons Support Team, Naval Weapons Assessment Station, Corona, CA analysts and telemetry equipment specialists, and Naval Aviation Engineering Services Unit avionics technical representatives whose composite knowledge and expertise cover all aspects of the weapon launch and target destroy sequence.

3.3.3 MAT Operation. Navy and Marine Corps squadrons will initiate a request for MAT assistance through the chain of command at least 14 days prior to the missile exercise. Prioritization of MAT support due to resource constraints (personnel or fiscal) may be required by the type commanders. The MAT will be available to Navy and Marine Corps squadrons prior to the scheduled exercise and at least 1 day after the completion of the exercise. A debrief will be provided to cognizant commands prior to team departure. For unscheduled exercises, the team will be available

as directed. The team leader will be responsible for generating a preliminary report of the exercise. The MAT will be available to cover exercises involving the following weapons:

Air-to-Air

AMRAAM
PHOENIX
SIDEWINDER
SPARROW

Air-to-Ground

HARM
HARPOON
HELLFIRE
GBU's
MAVERICK
PENGUIN
SIDEARM
SLAM/SLAM-ER
TALD/I TALD
TOW
JSOW
WALLEYE

3.3.4 Responsibilities

3.3.4.1 Squadron. During MAT exercises, the squadron performs the following actions:

- a. Navy and Marine Corps squadrons will initiate a request for MAT assistance through the chain of command at least 14 days prior to the missile exercise.
- b. Assigns a single point of contact to coordinate activities between the squadron and MAT. The squadron operations or maintenance officer is a preferred point of contact.
- c. Informs the cognizant functional, group, or operational wing coordinator of scheduled range times, loading times, aircraft assignments, aircrew brief and debrief times, locations, and preloading missile or weapon check times.
- d. Provides personnel when required for troubleshooting and system checks on failed or suspect aircraft systems.
- e. In the event of an unsuccessful guided weapon firing attempt, the aircraft will be impounded immediately upon its return. The aircraft will be checked by squadron personnel with the MAT present to determine cause of failure. Impound action may be waived by the cognizant functional wing, operational, or group commander.
- f. Missile logbooks for missiles expended operationally or for training shall be forwarded to Naval Air Warfare Center Weapons Division, ATTN: Code 362300E

(AWARS), 575 I Avenue, Suite 1, Point Mugu, CA 93042-5049.

3.3.4.2 Ship or Station. During MAT exercises, the ship or station is responsible for the following:

- a. Assigns a point of contact for MAT functions. Maintains liaison with other command-designated MAT points of contact.
- b. Provides transportation and berthing for transient MAT members.
- c. Provides the necessary unit area access permits or security badges for visiting MAT members.
- d. Provides the MAT with a copy of the exercise Missile Configuration Summary (appendix A). (TALD is excluded from this requirement.) This form should contain date of last rework, where stored since rework, captive carry entries, and date of last test.
- e. Provides expeditious supply and intermediate maintenance support as may be required to support the weapon exercise and to minimize aircraft impound time in the event of weapon firing problems.

3.3.4.3 Functional, Operational, and Group Commands. Functional levels of command perform the following:

- a. Assign an overall coordinator for MAT functions. Maintain liaison with other command-designated MAT points of contact.
- b. Provide advance notice of projected weapon firing exercises to cognizant type commands.
- c. Advise the cognizant type commander of conflicts that preclude availability of MAT services.
- d. Advise the cognizant type commander of weapon firing exercise periods, schedule conflicts, or changes in schedules.
- e. Initiate requisite action to correct training support and equipment deficiencies noted during the weapon firing exercise.

3.3.4.4 Fleet Weapons Support Team. Naval Air Warfare Center Weapons Division, Code 311200E, Pt. Mugu, CA. The NAVAIRWARCENWPNDIV, performs the following:

- a. Provides MAT services to Navy and Marine Corps as requested by Type Commanders, squadrons during weapon firing exercises to extend training potential, assess weapon performance, certify weapon system effectiveness,

and establish and maintain a data base on weapon and weapon system performance.

b. Designates a MAT team leader who will report to the functional, operational, or group overall coordinator. The team leader will organize and coordinate team activity with the squadron, functional, operational, or group coordinator.

3.3.4.5 MAT. MAT teams support the MAT program by providing the following assistance:

a. Provide advice, instruction, and training as appropriate during aircraft weapon release and control system checks prior to the missile exercise.

b. Monitor aircraft release and control system preoperational test and maintenance, and provide technical assistance.

c. Monitor uploading and downloading of specified airborne weapons.

d. Obtain weapon, aircraft, and launcher data.

e. Assist with postoperational weapon system analysis when in-flight discrepancies occur.

f. Conduct data review and write preliminary report.

3.3.4.6 MAT Leader/Member. The MAT leader/member performs the following:

a. Apprises all concerned of scheduled MAT activities.

b. Coordinates and directs team activity.

c. Attends pre-exercise briefs.

d. Monitors operational phase of missile exercise to observe in-flight evolution.

e. Attends aircrew postexercise debriefs.

f. Provides postexercise analysis to squadron.

g. Writes MAT preliminary report.

h. Provides postexercise debriefs as requested by the squadron, ship, functional wing, operational, group, or type commander.

i. Monitors and assists in preoperational and postoperational weapon system tests.

j. Obtains information on aircraft weapon system condition and performance.

k. Checks adequacy of publications, aviation support equipment, training, maintenance practices, and logistic support.

l. Participates in data analysis review.

3.3.5 Performance Evaluation and Analysis

3.3.5.1 NAVAIRWARCENWPNDIV. The NAVAIRWARCENWPNDIV performs the following:

a. Conducts in-depth evaluation of pertinent fleet weapon firings to determine the cause of those failures and recommend and propose solutions. Results shall be reported to fleet commanders, type commanders, program managers, development and in-service engineering activities, and other concerned activities.

b. Evaluates weapon firing envelopes by comparing theoretical projections and observed results.

c. Provides recommendations for the design of telemetry systems used to assess firings and firing attempts for all fleet exercises. Provide the requirements for functions to be monitored. Establish methods to provide the weapon system analyst with reduced telemetry data.

d. Monitors system and maintenance performance profiles to identify causative factors in weapon system performance deficiencies.

e. Enters weapon system performance failures in the Airborne Weapons Corrective Action Program and monitors until corrective actions are completed as appropriate.

f. Monitors and assists on all telemetered weapon exercises.

g. Ensures that installed telemetry is operational.

h. Provides team leader with quick look and preliminary analysis of telemetry data as soon as possible after each firing.

i. Provides the MAT with telemetry tapes and other specifics and technical information required for analysis and reporting purposes.

j. Participates in data review and analysis.

k. Attends aircrew briefs and debriefs and commanding officers' postoperation debriefing where possible.

CHAPTER 3.4

Conventional Ordnance Performance Evaluation (COPE)

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CHAPTER 3.4

Conventional Ordnance Performance Evaluation (COPE)

3.4.1 Conventional Ordnance Performance Evaluation (COPE) Program Elements

3.4.1.1 The Conventional Ordnance Performance Evaluation (COPE) provides the Naval Air Systems Command (COMNAVAIRSYSCOM) with performance on conventional ordnance dropped during fleet live ordnance exercises. The data for this information is gathered by COPE teams, who observe and record the performance data during fleet live ordnance exercises.

3.4.1.2 The intent of these evaluations is to maximize the information available on conventional ordnance performance and to ensure the accurate assessment of hardware and weapon system reliability as a function of fleet usage. These efforts also benefit Navy and Marine Corps squadrons through immediate feedback on problem areas, which in turn enhance the training evolutions for both ordnance, maintenance, and aircrew personnel.

3.4.1.3 The data generated by the COPE program, combined with the results of laboratory evaluations, provides COMNAVAIRSYSCOM with a comprehensive assessment of the reliability, maintainability, availability, and quality of conventional ordnance. Data generated during COPE exercises serve as a source of information for user activities with lead responsibility for an ordnance commodity and enables them to focus their efforts on suspected problem areas.

3.4.1.4 Data gathered during COPE exercises is analyzed to provide early detection of hardware problems experienced during actual usage. Many of these problems can only be identified through analysis of a number of COPE exercises due to the lack of statistical significance during any one exercise.

3.4.1.5 COPE teams assist in the evaluation of all aircraft, suspension, arming, and releasing equipment, weapon, and related weapon accessory performance to identify potential operational problems and to provide a valid assessment of the ordnance performance.

3.4.1.6 COPE participation is performed solely in the interest of improving and monitoring tactical aircraft weapon system performance and shall not be considered an inspection. Results of any one exercise should not be considered as an evaluation of the Navy or Marine Corps squadron. It

should be considered part of an overall assessment of a number of these exercises. This overall assessment provides a meaningful data base upon which relevant decisions on the hardware can be rendered and engineering investigations instituted. It may be used to highlight areas for training emphasis or operational changes. However, it should not be used to "score" specific crews or groups because of the inequities that would result due to varying conditions and operational requirements.

3.4.1.7 The reliability of conventional ordnance as demonstrated during laboratory evaluations has not always been the same as the reliability demonstrated during fleet usage. COPE efforts provide the necessary information for identifying the source of disparities and a valid data base from which decisions can be formulated to attack the problem areas.

3.4.1.8 In order to provide valid data on the performance of conventional ordnance during live ordnance evolutions, COPE teams must be concerned with the total weapon system being evaluated. This includes the aircraft, aircrew, maintenance personnel, ordnance personnel, and the weapons. Encompassed are all phases of the ordnance exercise, from weapon buildup to performance of the weapons during delivery and target impact.

3.4.1.9 COPE personnel attempt to identify the factors that caused the ordnance to perform improperly through the analysis of available maintenance information, postflight system checks, and range data from COPE team observations.

3.4.1.10 COPE teams participate during the live ordnance evolutions on a noninterference basis. This enables the COPE team to observe the performance of the conventional ordnance in the most realistic usage environment possible.

3.4.1.11 Whenever possible during these field exercises, the COPE team will have an observer at the target range to provide accurate information on the burst performance of the weapons. This information is correlated with the post-flight report provided by the pilot to yield the maximum amount of information on the performance of the ordnance during delivery, release, and detonation.

3.4.1.12 In the event an aircraft returns from a mission in which known ordnance failures occurred, but for which no

identifiable cause is available, an investigation of the aircraft weapon system will be performed. The squadron will provide the aircraft and maintenance personnel necessary to accomplish this postflight check in an expeditious manner so as to not disrupt flight evolutions. The system checks and troubleshooting should be accomplished before the next flight of the aircraft with live ordnance.

3.4.1.13 After the COPE exercise, the team will make an informal report to the Navy or Marine Corps squadron point of contact, usually the weapons officer. Specific information and data will be provided for the submission of quality deficiency reports, explosive mishap reports, hazardous material reports, and technical publication deficiency reports as required.

3.4.1.14 During the exercise, COPE team members record the serial numbers and lot numbers of all the ordnance items used during a flight, including station number on the aircraft and ejector rack. Following the flight, a COPE team member will query the pilot on the performance of the ordnance. He or she will also make a preliminary inspection of the aircraft stations from which live ordnance was delivered to identify any anomalies that may exist.

3.4.1.15 The data gathered during a COPE exercise is entered into the COPE data base, and at the end of the fiscal year, an annual COPE summary report is issued. This report provides the comprehensive analysis of the results and assesses overall performance of the conventional ordnance observed during COPE exercises for the year.

3.4.1.16 Most COPE exercises are performed at naval or Marine Corps air stations as part of a live ordnance exercise.

3.4.2 COPE Structure. COPE teams are an assemblage of personnel either from Crane Division Naval Surface Warfare Center, Crane, IN, and the Naval Surface Warfare Center, Division Indian Head, MD. These personnel are trained in the operation of the weapon systems they are evaluating and normally are also involved in the evaluation of those weapons and components in the laboratory.

3.4.3 COPE Operation. Upon receipt of information of an impending live ordnance evaluation, the Crane Division Naval Surface Warfare Center, Crane, IN, will contact the squadron weapons officer to inquire as to the suitability of the exercise for COPE participation and to make an initial request to participate. This is followed by a message to the squadron requesting authorization to participate. In addition, a message will be sent to the commanding officer of the station from which the ordnance will be loaded out or delivered which requests authorization. Participation of the

COPE team usually occurs during the portion of the live ordnance exercise when the ordnance of interest is being dropped. COPE exercises involve all types of conventional ordnance delivered, including bombs, rockets, cluster weapons, and guided free-fall weapons. The COPE team leader is responsible for providing a postexercise brief to the squadron commanding officer.

3.4.4 COPE Participant Responsibilities

3.4.4.1 Squadron. During COPE exercises, the squadron performs the following actions:

a. Assigns a single point of contact to coordinate the activities between the COPE team and the squadron. Preferably, the weapons officer will be the point of contact.

b. The point of contact should inform the functional groups of the scheduled participation of the COPE team. The point of contact will be the source of information for the COPE team on ordnance schedules, flight operations, range schedules, loading times, and aircraft assignments. The point of contact also designates the personnel to be contacted for performance of postflight checks of aircraft with ordnance failures.

3.4.4.2 Host Station. During COPE exercises, the host station is responsible for the following:

a. Assigns a point of contact for the COPE team regarding station participation in the live ordnance exercise.

b. Informs the COPE team of the necessary access and permits required by the team during the exercise to enable the team to participate fully in the exercise.

3.4.4.3 Crane Division Naval Surface Warfare Center Crane, IN responsibilities include the following:

a. Under the direction of the energetic component FST, Crane Division Naval Surface Warfare Center Crane, IN will be responsible for coordination of the NAVAIR COPE effort.

b. Crane Division Naval Surface Warfare Center Crane, IN will provide the necessary personnel to support both field exercises and data analysis phases of the COPE program.

c. Maintain the COPE data base of exercises in order to provide NAVAIRSYSCOM with the necessary historical data to make accurate and valid assessments of the performance of conventional ordnance.

d. Participate in Navy and Marine Corps squadron live ordnance exercises.

e. Conduct in-depth analysis of data from live ordnance exercises observed and recorded by COPE personnel. Analysis will be for the purpose of determining the causes of observed failures, trends in material defects which impact the reliability of weapon systems, and formulating recommendations to correct deficiencies. Results will be reported to NAVAIRSYSCOM and distributed to concerned fleet organizations and cognizant activities charged with addressing the problems observed.

f. The planning and execution of all aspects of the Sonobouy element of the COPE program. This includes the determination of evaluation sites, the conducting of the on-site visit, Sonobouy testing, data analysis and report preparation.

g. Preparation and issue of all COPE reports. These reports will be issued to NAVAIRSYSCOM with distribution to concerned fleet organizations and cognizant activities charged with addressing the problems observed.

3.4.4.4 Naval Surface Warfare Center Division Indian Head, MD as a participating activity is responsible for the following:

a. Participate in Navy or Marine Corps squadron live ordnance exercises, specifically those involving the 2.75-inch and/or 5.00-inch rocket systems.

b. Provide personnel in support of both field exercises and data analysis phases of the COPE program.

c. Maintain the COPE data base. Assist the lead activity in assuring that the historical data is accurate and valid, and provides the information needed to assess the performance of airborne rockets and rocket systems.

3.4.4.5 COPE Teams. COPE teams support the COPE program by providing the following assistance:

a. Participate in Navy and/or Marine Corps squadron live ordnance exercises.

b. Monitor the entire ordnance evolution during these exercises.

c. Record data during the live ordnance exercises including the serial number, lot number, manufacturer, manufacturing date, etc., of all the hardware used during the exercise.

d. Record aircraft loading information including aircraft station, ejector rack station, aircraft number, etc., for each piece of ordnance used during the exercise.

e. Assist in and record the results of postflight weapons system testing when inflight or ordnance failures occur.

f. Monitor loading of all ordnance used during the exercise.

g. Provide range observation whenever possible to record the performance of the ordnance during delivery and detonation.

h. Assist Navy and Marine Corps squadron personnel as requested to benefit those personnel during training exercises.

i. Perform data analysis and write exercise and summary reports containing the results of the analyses.

j. Provide COMNAVAIRSYSCOM with requested information on the performance of specific conventional ordnance weapons.

k. Coordinate COPE exercises with the designated points of contact at the Navy and Marine Corps squadron engaging in the live ordnance evolution.

CHAPTER 3.5

Aviation Ordnance Readiness Review

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CHAPTER 3.5

Aviation Ordnance Readiness Review

3.5.1 Aviation Ordnance Readiness Review (AORR) Program

3.5.1.1 The Aviation Ordnance Readiness Review (AORR) provides, at the request of the type commander force weapons officer, with information on the readiness of ship's weapons departments and aircraft intermediate maintenance departments in support of embarked air wings. The data for this information is gathered by the AORR teams during in-port periods of the workup cycle.

3.5.1.2 In order to provide this data, AORR teams must attempt to identify all shortfalls in ordnance material, support equipment, training, logistics, and publications. The data generated by the AORR program provides the force weapons staff with immediate feedback and comprehensive sources of available hardware or training required to enhance readiness.

3.5.1.3 AORR participation is performed solely at the request of the force weapons officer and shall not be considered an inspection. The results of any one assist visit by AORR teams should not be considered as an evaluation of performance of weapons department or AIMD personnel.

3.5.1.4 AORR personnel attempt to identify any requirements prior to deployment of the ship, in order to maximize any acquisition time or training needed.

3.5.1.5 After the AORR, the team will make an informal report at a debriefing of the ship's weapons officer, AIMD Officer, ordnance handling officer and any other personnel they see fit to attend. The data gathered will be provided to them along with possible solutions to alleviate any shortfalls.

3.5.2 AORR Team Structure

3.5.2.1 AORR teams are an assemblage of personnel from the Naval Air Warfare Center, Weapons Division, Fleet Weapons Support Team, Point Mugu, CA. They are primarily assigned to Navy and Marine Corps aircraft wings throughout the world. They are experienced in the weapons systems they are evaluating and are often involved in fleet live ordnance exercises and Missile Assist Teams. NAWC Weapons, being the Cognizant Fleet Activity/Fleet Support Team for in-service weapons system engineering, is unique-

ly prepared to provide team personnel with the expertise and experience necessary to conduct these reviews.

3.5.3 AORR Operation

3.5.3.1 Upon receipt of a request by a ship for an AORR, the force weapons officer will contact the Naval Air Warfare Center, Point Mugu, CA. requesting that an AORR be conducted. At that time, primary and backup dates and team availability will be discussed. This is followed by a message to Point Mugu requesting AORR team participation, with an info. copy to the ship. NAVAIRWARCENWPNDIV Point Mugu will then assign a team coordinator and team members, and send a message to the requesting ship with information copies to the force weapons officer and the team coordinator. This message will provide names, security clearance data, and mutually agreed upon dates for which the team to report aboard.

3.5.3.2 The scheduled time frame for the AORR is 5 days to allow for unforeseen problems or delays such as scheduled ammunition onloads, although most are completed in 3 to 4 days. Holidays should be avoided if possible.

3.5.3.3 Main areas covered by the AORR consist of but are not limited to: training, publications, airborne weapons support equipment (AWSE), magazines, conventional ordnance, all missile systems, peculiar items such as TALD, and nitrogen purification systems.

3.5.3.4 New ordnance or missile systems added to fleet inventories are incorporated into the AORR as information becomes available.

3.5.3.5 AIMD (Work Center 700) is also covered by the AORR due to the interface of armament equipment supported at the "I" level and testing, repair, and stowage of weapons related material. In this capacity, GSE and PME labs are also briefly included.

3.5.4 AORR Participant Responsibilities

3.5.4.1 Ship. During the AORR, the ship performs the following actions:

a. Assigns a single point of contact to coordinate the activities between the AORR team and ship's company per-

sonnel. Preferably the ordnance handling officer will be the point of contact.

b. The point of contact should inform the AIMD officer and weapons department personnel of the scheduled AORR and assign any required escorts with access to magazine spaces, publications tech library, armament support equipment spaces, and nitrogen purification facility required by the AORR team. The AIMD officer should provide a point of contact in AIMD, preferably the Work Center 700 Supervisor, to provide any access to K-pool spaces, PME lab, and "I" level tech library.

3.5.4.2 The Naval Air Warfare Center, Weapons Division is responsible for the following:

a. Assign a team coordinator and provide necessary personnel to conduct the AORR.

b. The AORR team coordinator assigns individual team members to their particular areas.

c. The AORR team conducts a debrief of the review and provides a report to the weapons officer, ordnance handling officer, AIMD officer or their representatives.

d. The AORR team conducts a debrief of the review and provides a copy of the report to the force weapons officer and his/her staff at their convenience and as soon as possible after the ship's debrief.

e. Assist the force weapons officer, ship's weapons officer, ordnance handling officer, AIMD officer, and their staffs in formulating recommendations to correct deficiencies.

f. Assist Navy personnel as required, to benefit those personnel during and after the review in any way possible.

g. Provide Navy personnel with addresses and phone numbers of points of contact in areas of concern in order to address any problems.

h. Assist in obtaining test equipment, bit parts, training, publications, logistics, and any other assistance requested when the normal procurement of such items is either unavailable or unscheduled.

i. Provide suggestions, recommendations, and assistance in any aspect of ordnance handling, breakout, inspection, assembly, configuration, testing, and maintenance in order to enhance readiness prior to deployment.

SECTION 4

Material Readiness and Integrated Logistics Support

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CHAPTER 4.1

Introduction

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CHAPTER 4.1

Introduction

4.1.1 General. This section addresses the interactive programs designed to provide integrated logistics support (ILS). In addition, these programs ensure that material readiness is maintained for all in-service ordnance. The ordnance maintenance program comprises a number of interactive programs that have been designed to address the multitude of functions essential for the logistics support of a weapon system throughout its life cycle. The programs discussed in this section provide the objectives, responsibilities, and guidance to meet asset readiness objectives. Asset readiness provides a meaningful measurement of ordnance serviceability. Basic considerations in this measurement are the quantity of serviceable assets in relation to total assets in inventory, up to the prescribed inventory objective. The inventory objective represents ordnance material to meet naval weapons requirements.

4.1.2 The Maintenance Process. The ordnance maintenance management program is an ILS function under the direction of the Chief of Naval Operations (CNO) (N781) who has further delegated the management of the maintenance program to the Logistics Management Division (AIR-3.1). Responsibilities include establishing and maintaining ILS elements during the weapon system's life cycle.

4.1.3 Life Cycle Maintenance Considerations

4.1.3.1 The cost of maintenance over the life cycle of a weapon system is significant. This cost is directly related to the supportability characteristics designed into the system as a function of ILS. ILS began to be recognized as a discipline in the mid-1960s. Prior to that time, maintenance support planning had been characterized by separate groups planning and managing what came to be recognized as elements of ILS. The ILS concept sought to draw these groups together under the direction of three driving concepts:

- a. That the decisions made in the design process inescapably impact the maintenance process and its potential efficiency, as well as costs during the production and operational phases of the life cycle.
- b. That the maintenance plan is the foundation document for all other maintenance-related support planning. JDAM did not develop a maintenance plan in support of the product life-cycle. JDAM has a joint Technical Order 11K31-2-7 (Air Force) / Technical Manual NAVAIR

11-5A-37 (Navy) which gives authorized maintenance procedures for the organizational/intermediate maintenance levels. Depot level manual was not a deliverable since Boeing Aerospace Corp., under the extended maintenance warranty, is the depot level repair facility. The TO/TM provides the O/I level procedures to return failed JDAM units to Boeing Aerospace Corp.

- c. That all ILS elements are related to each other; decisions about support planning must not change one element without considering what impact this will have on the other elements.

4.1.3.2 Throughout this period a measure of effectiveness for ILS has been sought. The concept of readiness now satisfies this need. It is also a CNO policy that system readiness objectives and thresholds serve as the basis for evaluating logistics support and planning and determining logistics support requirements. Resources to achieve readiness shall receive the same emphasis as those required to achieve schedule and performance objectives. Chapter 4.2 presents an overview of the logistics considerations during the life cycle of a weapon. Chapter 4.3 contains an explanation of assets and fiscal resources to support system readiness.

4.1.4 Integrated Logistics Support Policy and Readiness

4.1.4.1 The Deputy Chief of Naval Operations (Logistics) (N4) has been delegated the responsibilities and action for developing consolidated Navy ILS policy, guidance, and readiness objectives. SECNAVINST 5000.2B (NOTAL) assigns ILS responsibilities and consists primarily of the following tasks:

- a. Develop consolidated Navy ILS policy and guidance following SECNAVINST 5000.2B (NOTAL) for all echelons covering all life cycle phases (concept through disposal).
- b. Review all operational requirements and all major acquisition documents to ensure the adequacy of logistics planning and resources in relation to readiness objectives established by project sponsors and to ensure compliance with applicable policy requirements. Only the following acquisition documentation have been developed to support JDAM major milestone reviews:

(1) Single Acquisition Management Plan (SAMP).

(2) Acquisition Program Baseline (APB) appended to the SAMP.

(3) Joint Operational Requirements Document (CARD).

(4) Test and Evaluation Master Plan (TEMP).

c. Act as technical agent for assisting project sponsors in establishing readiness objectives and measures; ensure sponsor-established readiness objectives have a reasonable degree of consistency Navy-wide.

d. In conjunction with CNO Director of Test and Evaluation and Technology Requirements (N091) and project sponsors, ensure that preparation for certification for operational evaluation and subsequent operational test and evaluation are adequate to allow a sound assessment of logistics thresholds and readiness objectives; i.e., reliability and maintainability, testability, operational availability, etc.

e. Assess the results of the logistic review group operational test and evaluation reports for corrective action recommendations appropriate at Program Milestone III decision meetings.

f. Provide adequate resources for the formal training and career development of ILS professionals as required by SECNAVINST 5000.2B. (NOTAL)

g. Establish standard Navy logistics requirements and planned funding methodologies and coordinate with CNO (N78) and system commands.

4.1.4.2 Asset readiness has been established as a meaningful way of evaluating the ILS system. Basic consideration of this measurement is serviceable assets. The asset readiness objective is the goal to be achieved at the end of each fiscal year and is a percentage measure. That objective is established yearly based on resources available for maintenance and maintenance support.

4.1.5 Resource Sponsor

4.1.5.1 The resource sponsor of the Naval Ordnance Maintenance Program is the Director, Air Warfare Division (CNO (N78)). The Aviation Maintenance Program Branch (CNO (N781)) budgets and funds the aviation maintenance program. The Plans, Policy, and Fleet Maintenance Section (CNO (N781C)) is responsible for generation of the Opera-

tions and Maintenance, Navy (O&MN) funding for maintenance of ordnance. (CNO (N781C)) is also responsible for setting the maintenance policy for ordnance. This instruction defines maintenance policy for ordnance.

4.1.5.2 The maintenance program for ordnance is an ILS function under the direction of the Logistics Management Division (AIR-3.1). Responsibilities include maintenance planning, program coordinating, budgeting, and evaluating program progress. Maintenance plans are developed for each weapon system which serve as the basis for maintenance tasks performed at each maintenance level. Workload planning forecasts are used and adjusted to provide a basis for budget submission and the time-phased positioning of material. For JDAM, there is no scheduled workload or projected workload at the Weapon Station. Minimum repairs are authorized at the two lower levels of maintenance. Boeing Aerospace Corp. maintains the right to repair or replace assets as they see fit. There is "no scheduled maintenance" for fleet activities. Chapter 4.5 provides an overview of maintenance management responsibilities and objectives.

4.1.6 Field Activity Responsibilities

4.1.6.1 The maintenance engineering function sets forth design requirements to anticipate in-service needs for ease of maintenance and operational reliability. That includes testing, repair, provisioning, technical instructions, and all related requirements. The Naval Air Systems Command transfers these functions to designated cognizant maintenance engineering activities for in-service weapon system engineering. Chapter 4.4 outlines the maintenance engineering function, including activity assignment, tasking, functions, and maintenance plans. Chapter 4.6 explains the deficiency reporting program and related field activity responsibilities.

4.1.6.2 Chapters 4.7 and 4.8 describe the quality evaluation program and technical data, respectively. The quality evaluation program is managed by the Naval Air Systems Command (AIR-3.1). The program provides assessments of stockpile quality, serviceability, material degradation, and analysis of factors that adversely affect the stockpile. Technical data are presented in various forms. Data available to fleet and weapons maintenance activities generally fall into three categories: technical manuals, technical directives, and engineering drawings and associated data.

4.1.7 JDAM Acquisition Reform. The Assistant Secretary of the Navy (RD&A), in a memorandum dated 27 July 1994 (NOTAL) provided policy to fully implement the principles of the DoD acquisition reform initiatives issued by SECDEF Policy memo of 29 June 1994. (NOTAL) The joint direct attack munition (JDAM) program was one of five

programs chosen under this initiative. JDAM did not develop a maintenance plan in support of the product life-cycle. JDAM has a joint Technical Order 11K31-2-7 (Air Force) / Technical Manual NAVAIR 11-5A-37 (Navy) which gives authorized maintenance procedures for the organizational/intermediate maintenance levels. Depot level manual was not a deliverable since Boeing Aerospace Corp., under the extended maintenance warranty, is the depot level repair facility. The TO/TM provides the O/I level procedures to return failed JDAM units to Boeing Aerospace Corp. Only the following acquisition documentation have been developed to support JDAM major milestone reviews:

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CHAPTER 4.2

Integrated Logistics Support

4.2.1 General

4.2.1.1 Integrated Logistics Support (ILS) is a unified and interactive approach to the management and technical actions necessary to:

- a. Cause support considerations to influence systems and equipment requirements and design.
- b. Define support requirements that are related to systems and equipment design and to each other.
- c. Acquire planned support, operational systems, and equipments.
- d. Provide the required support at the least life cycle cost.

4.2.1.2 ILS begins in the preconcept phase of a system's life cycle and continues during the entire life of a system.

4.2.2 ILS Elements. The management discipline that came to be recognized as ILS contains ten elements. Prior to being recognized as the ILS elements, military support planning had been characterized by separate groups planning and managing these elements. The ILS concept sought to draw these separate groups together into a systems management discipline. SECNAVINST 5000.2B (NOTAL), integrated logistics support in the acquisition process, is used to establish ILS policy and assign responsibilities. This instruction defines the ILS elements as:

- a. Maintenance Planning. The process conducted to evolve and establish maintenance concepts and requirements for the life time of a material system.
- b. Manpower and Personnel. The identification and acquisition of military and civilian personnel with the skills and grades required to operate and support a material system over its life time during peacetime and wartime.
- c. Supply Support. All management actions, procedures, and techniques used to determine requirements to acquire, catalog, receive, store, transfer, issue, and dispose of secondary items. This includes provisioning for initial support as well as replenishment supply support.
- d. Support Equipment. All equipment (mobile or fixed) required to support the operation and maintenance of a

material system. This includes associated multiuse end items, ground handling and maintenance equipment, tools, metrology and calibration equipment, test equipment, and automated test equipment. It includes the acquisition of logistics support for the support and test equipment itself.

e. Technical Data. Recorded information regardless of form or character (such as manuals and drawings) of a scientific or technical nature. Computer programs and related software are not technical data; documentation of computer programs and related software are. Also excluded are financial data or other information related to contract administration.

f. Training and Training Support. The processes, procedures, techniques, training devices, and equipment used to train civilian and active duty and reserve military personnel to operate and support a material system. This includes individual crew training; new equipment training; initial, formal, and on-the-job training; and logistics support planning for training equipment and training device acquisitions and installations.

g. Computer Resources Support. The facilities, hardware, software documentation, manpower, and personnel needed to operate and support embedded computer systems.

h. Facilities. The permanent or semipermanent real property assets required to support the material system, including conducting studies to define types of facilities or facility improvements, locations, space needs, environmental requirements, and equipment.

i. Packaging, Handling, Storage, and Transportation. The resources, processes, procedures, design considerations, and methods which ensure that all system, equipment, and support items are preserved, packaged, handled, and transported properly, including environmental considerations, equipment preservation requirements for short- and long-term storage, and transportability.

j. Design Interface. The relationship of logistics-related design parameters, such as reliability and maintainability, to readiness and support resource requirements. These logistics-related design parameters are expressed in operational terms rather than as inherent values and specifically relate to system readiness objectives and support costs of the material system. Design interface seeks to make designers more conscious of how the equipment will make demands on the logistics system, rather than simply discussing inherent

reliability and maintainability values (i.e., mean time between maintenance actions rather than mean time between failure). It also seeks to provide product specifications which quantify demands on the logistics system as a measure of system performance rather than inherent technical factors of design.

k. **Related Areas.** Closely related and often intertwined, areas include configuration management, system safety, quality assurance, standardization, human engineering, corrosion prevention, energy management, and hazardous materials control and management.

4.2.3 Logistics Support Analysis. Both ILS and logistics support analysis (LSA) have the objectives of improving supportability, reducing costs, and increasing system effectiveness. LSA is the process which analytically determines logistic support requirements and interfaces the ILS effort with system engineering to influence the design of the system or equipment for supportability. It is systematic in its approach to designing the logistic support system, considering interfaces with the mission system or equipment design and operational constraints. It is interactive in accomplishments consistent with level of indeture progression of system or equipment design. In its simplest form, the LSA process is a relative set of tasks and subtasks performed to meet the LSA objectives. The tasks are designed to:

- a. Establish supportability design requirements.
- b. Develop viable support concepts and support system alternatives.
- c. Evaluate design, support, and operational concept alternatives.
- d. Identify detailed logistics resource requirements which satisfy readiness requirements.
- e. Verify achievement of supportability requirements.

4.2.3.1 The LSA process integrates various scientific and engineering analysis methods using the system engineering process. LSA provides a tailored approach to the system engineering process to establish supportability influence on the system or equipment design and the design of the support system. The process originates with the identification of logistic needs which are defined into functional requirements. Alternative support systems are synthesized to satisfy the functional requirements. Trade-off analyses are conducted to weigh and compare the system design, functional requirements, and alternative support systems to formulate system or equipment design changes which will enable better, more cost effective supportability, the optimal support system, the ILS resources required, and the optimum minimization of hazardous materials.

4.2.3.2 The LSA process defined in MIL-STD-1388-1A (NOTAL) includes 15 tasks and 77 subtasks which produce information and data to enable attainment of the general LSA objectives in a disciplined, analytical way. The 15 tasks are grouped in 5 sections. The tasks are discussed below.

4.2.3.2.1 Task Section 100, Program Planning and Control. This task section provides the planning and controlling guidance upon which the LSA program will be based.

a. Task 101, The Development of an Early Logistics Support Analysis Strategy. Task 101 identifies supportability, cost, and readiness constraints and defines how LSA resources are to be used to cost effectively achieve the LSA program objectives. It is the basis for LSA planning and logistics input to program initiation documents.

b. Task 102, Logistics Support Analysis Plan. Task 102 responds to the LSA strategy and identifies and integrates all LSA tasks, identifies management responsibilities and activities, and outlines the approach for accomplishing LSA tasks as tailored for the specific program.

c. Task 103, Program and Design Reviews. Task 103 establishes the requirement for the performing activity to plan and provide official review and control of released design information with LSA program participation in a timely and controlled manner. Task 103 assures that the LSA program proceeds in accordance with the contractual milestones so that supportability and supportability-related design requirements will be achieved.

4.2.3.2.2 Task Section 200, Mission and Support Systems Definition. The 200 series tasks are a primary means of achieving system or equipment design influence and establishing requirements for design of the logistics support system.

a. Task 201, Use Study. Task 201 identifies and documents the pertinent supportability factors relative to the intended use and deployment of the new system or equipment. The initial use study is the prerequisite task to all others in the LSA process and provides the basis for supportability objectives and the LSA strategy development.

b. Task 202, Mission Hardware, Software, and Support System Standardization. Task 202 identifies supportability benefits which can be achieved by standardizing component design and the constraints which are mandated for inclusion in the system or equipment design.

c. Task 203, Comparative Analysis. Task 203 develops a baseline comparison system to project supportability-related parameters for the new system or equipment, identifies targets for improvement, and determines the supportability, cost, and readiness drivers anticipated for the new system or equipment design.

d. Task 204, Technological Opportunities. Task 204 identifies and evaluates design technology opportunities for improvement of supportability characteristics and requirements in the new system or equipment.

e. Task 205, Supportability and Supportability-Related Design Factors. Task 205 identifies the reasonable supportability, cost, and readiness goals and objectives to be achieved in the design of the new system or equipment.

4.2.3.2.3 Task Section 300, Preparation and Evaluation of Alternatives. The primary focus of the 300 series tasks is on the design of the logistic support system, although the task series also provides secondary input contributing to system or equipment design and logistic resource requirements determination.

a. Task 301, Functional Requirements Identification. Task 301 identifies the operations and support functions that must be performed for each system or equipment design alternative being considered. It also identifies the tasks which must be performed to operate and maintain the new system or equipment in its intended environment.

b. Task 302, Support System Alternatives. Task 302 develops viable support system alternatives for evaluation, tradeoff analyses, and determination of the best support system to be developed to support the new system or equipment.

c. Task 303, Evaluation of Alternatives and Tradeoff Analysis. Task 303 accomplishes the evaluation and tradeoff analysis of alternative support systems developed in Task 302 and identifies the best support system for development.

4.2.3.2.4 Task Section 400, Determination of Logistics Support Resource Requirements. The tasks in the 400 series primarily focus on the determination and identification of logistics support resources required to support the new system or equipment during its entire life cycle.

a. Task 401, Task Analysis. Task 401 analyzes the operations and maintenance tasks associated with the new system or equipment to identify total logistics support resource requirements, new or critical resource requirements, transportability requirements, and new or critical resource requirements which exceed established goals, thresholds, or constraints. Task 401 also provides data to support the development of hardware design alternatives to reduce operation and support costs, optimizes logistics support resource requirements or enhances readiness, and provides source data for preparation of required ILS documentation regarding detailed support resources necessary to support the new system or equipment.

b. Task 402, Early Fielding Analysis. Task 402 identifies sources of manpower and personnel to support the sys-

tem or equipment, determines the impact of failure to obtain the required logistics support resources, and identifies those resources essential to operation of the system or equipment in a combat environment.

c. Task 403, Post Production Support Analysis. Task 403 analyzes life cycle support requirements prior to closing the production lines to assure that adequate logistics support resources will be available for the remaining life of the system or equipment.

4.2.3.2.5 Task Section 500, Supportability Assessment. The 500 series task provides primary inputs to influence the system or equipment design for supportability, design the logistics support system, and determine logistics resource requirements. Task 501, Supportability Test, Evaluation, and Verification, is the only task in the 500 section. It assesses the achievement of specified supportability requirements, identifies reasons for deviations from projected supportability parameters, and identifies methods of correcting deficiencies to enhance system or equipment readiness. System or equipment design influence is established via the engineering change proposal process. Task 501 is dependent upon inputs from Task 205 and cannot be adequately accomplished if Task 205 is not accomplished.

4.2.3.3 Use of LSA Products. The performance of each task and subtask results in narrative reports, LSA records, and other data products, including data from other related engineering fields. The applicable data products are updated each time a task or subtask is reiterated or updated. The iteration may occur because of progression into a new acquisition phase or because of changes in the hardware design or operational parameters that impact LSA. LSA documentation is used to support related design specifications, to integrate the ILS elements into an optimal support system, and to determine detailed logistics support resources necessary to meet readiness goals. LSA documentation also provides the basis for preparing support plans relative to personnel and training, maintenance, supply support, support equipment, facilities, and other data products.

4.2.3.4 The LSA Record (LSAR). LSAR data provides the ILS technical data base applicable to all material acquisition programs through proper tailoring to satisfy logistics support acquisition. LSAR data records, data element definitions, data field lengths, and data formats are described in MIL-STD-1388-2B (NOTAL). The specific data entry media, storage, and maintenance procedures are left to the discretion of the performing activity. LSAR data may be prepared and stored manually, automatically through the use of current computer technology, or semiautomatically by combining manual and automatic techniques. A standard Joint Service LSAR automated data processing system is available for automated storage of LSAR data which gener-

ate the LSAR master files and LSAR reports described in MIL-STD-1388-2B (NOTAL). Figure 4-2-1 lists the LSAR master files.

4.2.3.5 JDAM does not conform to the standard LSA process requirements. JDAM utilized the LSA and LSAR process during EMD I, the logistic Support Analysis (LSA) and Logistic Support Analysis Record (LSAR) contract requirement were deleted due to the 20-year extend warranty and configuration control remaining with the JDAM contractor.

4.2.4 Maintenance Planning. The high cost of equipment acquisition and integrated logistics support has necessitated the development and implementation of uniform maintenance planning policies for systems and equipment. This policy is designed to ensure: (1) the development of the minimum set of maintenance requirements necessary to ensure the operation of the equipment at its assigned readiness threshold; (2) the assignment of requirements to the maintenance levels where they will be accomplished most efficiently and effectively; and (3) the development of a maintenance plan which will provide the logistics manager with the information necessary to make intelligent ILS planning and management decisions. The maintenance plan developed for a specific system or equipment acquisition program is the logistics element which drives development of most of the remaining elements (excluding operator training and publications, some packaging, handling, storage and transportation, and some computer resources support). The maintenance plan for the system provides overall guidance on how, and at what level, maintenance will be performed and the support requirements at each maintenance level. It is Navy policy that three levels of maintenance, i.e., organizational, intermediate and depot, will be considered for repairable systems. As the acquisition program proceeds through the various development phases, maintenance decisions will become increasingly specific with ultimate assignment of repair of individual repairable items to one of the three levels of maintenance or, if possible and strongly recommended, assignment of progressive repair through each level. Specifically, the maintenance plan establishes and delineates the

repairable components and maintenance requirements of a selected system or item of equipment.

4.2.4.1 Maintenance planning is applicable to: (1) all new development equipment procured by systems commands or CNO program managers, their field activities, or inventory control points (including that for which the requirements of SECNAVINST 5000.2B (NOTAL) are applicable); (2) existing in-service equipment for which new or extensively modified support scenarios (e.g., intermediate level or contractor support, etc.) are planned; and (3) any commercial or off-the-shelf type equipment for which organic integrated logistics support planning and subsequent organic maintenance capability at any level is expected.

4.2.4.2 Maintenance planning shall be accomplished and maintenance plans issued and maintained for all systems and equipment. The maintenance plan will be used to translate the maintenance approach delineated in the system or equipment maintenance concept into a minimum set of task requirements which must be accomplished to ensure its ongoing readiness. As a minimum, it will contain the following information: a short narrative equipment description; a concise summary of the maintenance actions required for equipment support; a top-down listing of the basic repairable number and drawing nomenclature to the shop replaceable assembly level; the source, maintenance, and recoverability codes assigned to each of the basic repairables, projected or current parts usage data (i.e., technical factors); and a list of common and special purpose support equipment required including any maintenance assist module requirements. Approved maintenance plans will be used to develop and procure the logistics requirements necessary to support systems or equipment in the intended operational environment. Maintenance plan format is at the discretion of systems commands in accordance with current directives. Certain equipment may fall into recognizable families where differences among products of various manufacturers are small. These equipments may be treated by a master maintenance plan approach so long as procedures are developed to insure that this master plan is actually used to develop support requirements and that it actually reflects true configuration of each article it is meant to cover. The program manager and logistics manager shall ensure that:

Operation and Maintenance Requirements	Data Record A
Item Reliability and Maintainability Characteristics	Data Record B
Failure Modes and Effects Analysis	Data Record B1
Criticality and Maintainability Analysis	Data Record B2
Operation and Maintenance Task Summary	Data Record C
Operation and Task Analysis	Data Record D
Personnel and Support Requirements	Data Record D1
Support Equipment and Training Material Description and Justification	Data Record E
Unit Under Test and Automatic Test Program(s) Description	Data Record E1
Facility Description and Justification	Data Record F
Skill Evaluation and Justification	Data Record G
Support Items Identification	Data Record H
Support Items Identification (Application Related)	Data Record H1
Transportability Engineering Characteristics	Data Record J

Figure 4-2-1. LSAR Master Files

a. The data necessary for the development of maintenance plans or revisions are developed utilizing a clearly defined process that: (1) translates the requirements of the established system maintenance concept into a clearly defined set of maintenance requirements that are tailored to consider the inherent design features and failure modes of the equipment; (2) encompasses the reliability centered maintenance analysis process; and (3) subjects the equipment to a Level of Repair Analysis under MIL-STD-1390B (NOTAL). The potential increase in readiness as a result of using organizational or intermediate level repair shall be investigated and shall be a major factor in making maintenance level decisions as a cost-effective means is sought to provide the level of support required to meet the system's specified readiness.

b. Maintenance plans and changes are prepared and maintained and contain at least the minimum contents referred to above. When a design change or other action necessitates the revision of a maintenance plan, the revised plan shall be documented and issued in a format compatible with that used in the original.

c. Maintenance plans and the changes thereto are distributed to type commanders, the Naval Technical Services Facility, the cognizant program support inventory control point, cognizant field activities, systems command representatives, logistics managers, logistics element managers, and other logistics support activities for implementation and action.

d. Validation and verification of ILS products includes comparison of technical publications, provisioning parts list, preventive maintenance documentation, etc., to insure that Source, Maintenance, and Recoverability coding in these documents agrees with that in the approved maintenance plan.

4.2.5 Life Cycle Logistics. Life cycle logistics is the series of phases that constitute the scenario of a product from the time concept planning is started to disposal. The following phases make up life cycle logistics:

a. **Preconcept Formulation Phase.** During this period, the projected need is validated and program initiation documents are prepared. Broad requirements and mission statements are identified and preliminary funding requirements are submitted. ILS and LSA inputs include the accomplishment of a use study, preparation of supportability constraints, an ILS concept, and an LSA strategy for the proposed system or equipment.

b. **Concept Exploration Phase.** During concept exploration, alternative proposals to satisfy the identified need are evaluated and compared in terms of performance, cost,

schedule, readiness, and supportability parameters. System level analyses that affect design and operational concepts, gross logistics resource requirements, and relative design and operational and support characteristics to system or equipment readiness are defined. The ILS and LSA products include readiness and cost improvement targets, support concept alternatives, and supportability-related design and support system objectives.

c. **Demonstration and Validation Phase.** The demonstration and validation phase transforms the conceptual design into practical design criteria suitable for hardware development. This is accomplished by verifying that technical uncertainties underlying the design have been removed. The design may be evaluated with advance development models. The ILS and LSA products include a firm support concept, firm supportability-related design goals and thresholds, and readiness and support system parameter objectives.

d. **Full Scale Development Phase.** The full scale development phase transforms the design concept that was validated in the preceding stage into engineering development models and detailed specifications. These models are fabricated in the physical configuration called for in the allocated baseline specification. The purpose of this phase is to conduct functional and environmental tests using models or prototypes to verify that the design satisfies specified performance requirements. The ILS effort in this phase is heavily influenced by maintenance planning to identify detailed logistics support resources required to meet readiness objectives and actions required to correct deficiencies discovered during tests and evaluations. Logistics and maintenance support requirements and solutions to deficiencies are validated through operational testing. Detailed analyses are conducted to identify preventive and corrective maintenance, calibration, and servicing requirements. Logistics element analyses are accomplished and firm maintenance plans are developed.

e. **Production and Deployment Phase.** Production during this phase translates the engineering model or prototype developed and optimized in the full scale development phase into production hardware for delivery to the fleet. Manufacturing, processing, and tooling; inspection and test procedures; and management control techniques are designed specifically for reproduction of the prototype on an economical mass production basis. Deployment is concerned with the successful introduction of the weapon system or equipment into fleet operational use. This phase primarily involves the establishment of an effective support base performing required training and problem resolution through feedback mechanisms. ILS and LSA actions include continued assessment of supportability and readiness, improvement of problem areas, initiation of planning for

post-production support, and maintenance and update of the LSAR during the life cycle of the system or equipment.

f. **Operation and Support Phase.** This is the phase where proper planning and support pays off in minimizing the maintenance and support burden. It is also the phase that encompasses mid-life review which can result in modernization decisions or product improvements. ILS tasks considered during this phase include maintenance management, maintenance operations review of personnel requirements, evaluation and adjustment of service life and maintenance schedules, phase-down of training, maintenance of publications, and a host of other ILS support tasks. During the operation and support phase, the LSA is maintained and data records are updated as operational experience is obtained. This ensures proper technical factors for maintenance and procurement supplies in support of system operation.

g. **Disposal Phase.** The disposal phase of the system life cycle begins with the system being classified as obsolete and a disposal plan prepared. ILS considerations include resale versus discard analysis, environmental impact studies, declassification instructions, and determining and reporting excess assets. After these considerations are made and the disposal plan is completed, the demilitarization actions begin. This effort includes reclaiming of precious metals, recycling appropriate material, rescinding publications, dismantling facilities, and securing explosive material that is no longer maintained as active inventory.

4.2.6 ILS Variations. In practice, numerous acquisition programs deviate from the classic sequence of phases. An acquisition may be initiated in the full scale development phase. Accelerated acquisition programs may proceed through the sequence of phases too rapidly to accommodate the ILS and LSA data accumulation process. A product improvement program may be conducted in lieu of a new system or equipment procurement, or a commercial system or equipment already in production may be procured with no developmental effort involved. The acquisition phase sequence may be as simple as a preproduction test followed by a production test. The actual phase sequence applicable to a program is a vital consideration in tailoring the LSA and LSAR requirements to achieve the required degree of supportability on a timely basis.

4.2.7 Minimum ILS Products. It is the program manager's responsibility to see that these products are procured and available, regardless of which activity, functional code, etc., actually does the procurement. The program manager is ultimately responsible for the support products at all levels of maintenance for the platform system or equipment. Acquisition programs which fail to meet these and other mini-

mum standards as set forth by CNO are not to be introduced into the fleet without approval of the CNO.

(1) Minimum ILS Product Requirements.

- a. Maintenance plan.
- b. Maintenance manuals, verified to be under the maintenance plan, for all levels of maintenance.
- c. Operator or user manuals (hardware and software).
- d. Interim or initial spare parts.
- e. Provisioning technical documentation.
- f. Support equipment as shown in the maintenance plan for all levels of maintenance.
- g. Navy training plan, approved by CNO.
- h. Training curricula, equipment, materials, and facilities as described in the Navy training plan.
- i. Integrated Logistics Support Plan, Operational Support Summary, and Phased Support Plan.
- j. Logistics requirements and funding as required.
- k. Logistics requirements and funding plan.
- l. Hazardous Material Control and Management Program Plan.

(2) New Acquisition Reform Minimum Requirements.

- a. Maintenance Planning.
- b. Repair Analysis.
- c. Support and Test Equipment.
- d. Supply Support.
- e. Manpower, Personnel, and Training.
- f. Facilities.
- g. Packaging, Handling, Storage, and Transportation.
- h. Logistics requirements and funding as required.
- i. Logistics requirements and funding plan.
- j. Hazardous Material Control and Management Program Plan.
- k. Post Production Support.
- l. Demilitarization Plan.

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CHAPTER 4.3

Material Management

4.3.1 General. This chapter identifies and discusses naval airborne weapons material management policies and responsibilities.

4.3.2 Background

4.3.2.1 The size of the Navy's repairables program, the program's dependency on responsible industrial capability and capacity, its rapid growth rate, and the high dollar value of repairable materials dictate the need for comprehensive repairables management policies and procedures. Because of the scope and volume of repairable tasks, computers must be used effectively to manage the program. This requires that repairables management be strictly and uniformly defined, standardized, regulated, and controlled, and that operational requirements and deficiencies be clearly recognized.

4.3.2.2 In addition to Navy initiatives, the Department of Defense (DoD) is striving to reduce logistics support costs by expanding interservice support. The thrust of this effort focuses on two elements: depot maintenance interservicing and integrated management of wholesale stocks. The objective of the depot maintenance interservicing effort is to consolidate the repairables workload of two or more services at a single depot when this is cost effective and will not degrade the support of the operating forces. Integrated management is a continuation of the DoD's "one item, one manager" policy, in which only one service is designated as the wholesale manager for each repairable in the DoD inventory.

4.3.2.3 To ensure the optimum availability of the repairables to sustain established levels of full system capability, efficient management systems must be utilized.

4.3.3 Policies and Concepts. There are several significant principles and functions that must be followed to achieve success in the material management program.

4.3.3.1 Close liaison must be established and maintained between supply and maintenance, both organizational and intermediate level, in achieving the common goal of maximum weapon system operational readiness.

4.3.3.2 Material management involves a direct relationship between the two complex operations of maintenance and supply. It is important that these operations have a single point of contact for coordinating those functions that are common to both. The success of material management at any activity depends largely on the success of this coordination effort. It is imperative that supply and maintenance personnel be familiar with responsibilities of both. Material control branches are contact points for maintenance operations. Supply support centers are contact points for supply operations.

4.3.3.3 A meeting will be held at least weekly between supply and organizational and intermediate level maintenance representatives to discuss Not Mission Capable Supply (NMCS) and Partial Mission Capable Supply (PMCS) and other high priority-related requirements.

4.3.3.4 A meeting will be held at least monthly between supply and organizational and intermediate level maintenance representatives to resolve problems, establish local procedures that do not conflict with this instruction, and to promote material support effectiveness. The meeting will be chaired by the aircraft intermediate maintenance department officer and shall include appropriate organizational level, intermediate level, group supply supervisors, and staff representatives.

4.3.3.5 The use of sophisticated management techniques and devices, such as mechanized cards, files, and listings; Visual Information Display System boards; and minicomputers will improve material management.

4.3.3.6 Information procedures should be adapted to automated techniques or visual display systems where capabilities exist. This eliminates the need for manually processing documents and records and provides real-time knowledge of the availability of required material.

4.3.4 Ammunition Material Condition Codes. These alpha character codes separate and identify the physical condition of ammunition material (i.e., codes A through D identify ammunition material in a serviceable condition, while codes E through P identify ammunition material in an unserviceable state). See Volume IV, Appendix "B" of this instruction or NAVSUP P-724 (NOTAL) for further definition and application.

4.3.5 Depot Level Repairables and Field Level Repairables

4.3.5.1 Depot level repairables and mandatory turn-in repairables must be turned in for repair at the designated overhaul points when they are beyond the capability of field level maintenance facilities. Depot level repairables can be repaired at the lowest maintenance level that has the required capability in accordance with source, maintenance, and recoverability (SM&R) codes, but can only be condemned at the depot level or at the direction of the depot maintenance activity. Depot level repairables are identified by material control codes E, G, H, Q, and X.

4.3.5.2 Field level repairables are items which can be repaired at organizational and intermediate level maintenance facilities. When field level repairables cannot be repaired locally and there are no designated overhaul points listed in the Individual Material Readiness List, field level repairables should be disposed of locally. An exception to repair or disposal action below depot level maintenance may occur during depot networking of the end item or equipment in which it is installed. Field level repairables are assigned material condition code "D." See NAVSUP P-724 (NOTAL) for repairable material condition codes.

4.3.6 Provisioning. Provisioning is the process of determining the range and quantity of items, such as spares and repair parts, special tools, test equipment, and support equipment, required to support and maintain an end item of material for a specified period of service. Provisioning includes the identification of items of supply, the establishment of data for cataloging, preparation of technical manuals and allowance tables, and the preparation of instructions to ensure delivery of necessary support items with related end articles. Provisioning encompasses all the actions necessary to ensure material support of the operational weapon system. A basic input to the provisioning process is the maintenance plan, which identifies the repairable items and delineates their levels of removal, repair, and disposal.

4.3.7 Source, Maintenance, and Recoverability Codes

4.3.7.1 SM&R codes are used primarily to identify the source of supply for spares, repair parts, and items of support equipment, and the levels of maintenance authorized to maintain, repair, overhaul, or condemn the item.

SM&R codes are detailed in NAVAIRINST 4423.11 (NOTAL).

4.3.7.2 The SM&R code is a uniform six-position code consisting of a two-position source code, a two-position maintenance code, a one-position recovery code, and a one-position optional supplemental code (rarely used). Through the application of sound maintenance and supply experience and judgment, the SM&R code can control the range of parts purchased for support. Further, the SM&R code can expedite and improve the maintenance, repair, and overhaul times by providing supply and maintenance implications. SM&R codes are available through various publications, such as maintenance plans, allowance lists, Illustrated Parts Breakdown, technical manuals, maintenance instruction manuals, and various supply manuals.

4.3.7.3 Uniform SM&R codes shall be used in all commodity areas where provisioning is practiced and shall be consistent with approved maintenance plans. SM&R codes apply to:

- a. All new equipment being provisioned.
- b. An equipment when it is reprovisioned.

4.3.7.4 Figure 4-3-1 depicts the format for requesting SM&R code changes of repairable items. All change requests must be submitted to AIR-3.1 in the prescribed format. AIR-3.1 serves as the focal point for processing and tracking SM&R code change requests and effects proper coordination with AIR-3.2.

4.3.7.5 AIR-3.2 will prepare and release all SM&R code change requests. For an approved change request, a letter directing implementation will be transmitted to the inventory control point, either the Naval Inventory Control Point (NAVICP) Philadelphia, PA or Naval Ammunition Logistics Center NAVAMMOLOGCEN Mechanicsburg, PA. For a disapproved change request, a letter citing the reasons will be transmitted to the originator.

4.3.7.6 When distribution has been made by AIR-3.2, the inventory control point must ensure that corrections to all impacted logistics documents are initiated and carried through to completion.

4.3.7.7 For additional information concerning policies, procedures, and responsibilities applicable to SM&R codes, refer to OPNAVINST 5090.1B (NOTAL), OPNAVINST 5100.19D (NOTAL), and NAVAIRINST 4423.11 (NOTAL).

SM&R CODE CHANGE REQUEST		(See NAVAIRINST 4423.11)		CONTROL NO. NAVAIR HQ ASSIGNED	
NAVAIR FORM 4423/1 (7/79) S/N 0102 LF 604 4230					
FROM		CODE	TELEPHONE NO.		DATE
TO: COMMANDER, NAVAL AIR SYSTEMS COMMAND (AIR-3.2)					
VIA					
(1)		(2)			
CURRENT SM&R CODE		RECOMMENDED SM&R CODE			
PART NUMBER (INCLUDE FSCM)		NATIONAL STOCK NO. (COG, FSC, NIIN, SMIC)			
NOMENCLATURE		WORK UNIT CODE		UNIT COST	
NEXT HIGHER ASSEMBLY (NOMENCLATURE)	SYSTEM APPLICATION		AIRCRAFT (OR OTHER END ITEM)		
PUBLICATION NO. (TITLE, PAGE, FIGURE, INDEX, DATE)		MAINTENANCE PLAN NUMBER			
REIMSDN JUSTIFICATION (ATTACH CONTINUATION SHEETS AS REQUIRED)					
SIGNATURE AND TITLE		CODE	TELEPHONE NO.		DATE
FIRST ENDORSEMENT					
FROM		TO			
REMARKS					
SIGNATURE AND TITLE		CODE	TELEPHONE NO.		DATE
SECOND ENDORSEMENT					
FROM		TO			
REMARKS					
SIGNATURE AND TITLE		CODE	TELEPHONE NO.		DATE
NAVAIR HQ/DESIGNATED ACTIVITY DISPOSITION					
NAVAIR HQ DESIGNATED ACTIVITY		CODE	TELEPHONE NO.		DATE
REMARKS					
MAINTENANCE PLAN CHANGE REQUIRED		CURRENT USAGE RECOVERY APPLICABLE			
<input type="checkbox"/> YES <input type="checkbox"/> NO		GRF _____ RPF _____ OTH- MRF _____ ISR _____ ER			
<input type="checkbox"/> YES <input type="checkbox"/> NO		<input type="checkbox"/> YES <input type="checkbox"/> NO			
SIGNATURE AND TITLE					CODE

Figure 4-3-1. SM&R Code Change Request

4.3.8 Configuration Management. Configuration management is vital to the acquisition process and is the key to making Integrated Logistics Support (ILS) decisions in each ILS element. The purpose of configuration management is to establish the discipline for managing the functional and physical characteristics of an item as well as its documentation throughout the entire acquisition and support process. There are no configuration management plans for JDAM. The JDAM contractor (Boeing) is the configuration manager for the JDAM weapon system. MIL-STDs and MIL-SPECs were not imposed on the contractor except for those relating to safety.

4.3.9 Warranty Management

4.3.9.1 The term “warranty” refers to a promise or affirmation given by a contractor to the Government regarding the nature, usefulness, or condition of the supplies or services furnished under the contract.

4.3.9.2 Section 2403 of Title 10 of the United States Code requires that DoD obtain warranties in contracts awarded after 1 January 1985 for the acquisition of weapons system equipment. Each contract must contain warranties covering design and manufacturing requirements, defects in materials and workmanship, and essential performance requirements. The warranties will provide ample time after delivery of the weapons system equipment for the Government to assess achievement of specification requirements and ensure that the equipment is free from defects in materials and workmanship.

4.3.9.3 NAVAIRINST 13070.7 (NOTAL) assigns responsibilities for the application of warranty provisions as part of contracts for the development, production, and modification of Naval Air Systems Command (NAVAIR-SYSCOM) weapons systems. In accordance with NAVAIRINST 13070.7 (NOTAL), COMNAVAIRSYSCOM (AIR-3.1) and (AIR-4.1) will coordinate to develop warranties for airborne weapons.

4.3.9.4 JDAM has a unique 20-year extended maintenance-repair warranty for the guidance kits in container (shelf life) and 5-year warranty for service life out of the container. The Navy will track service life of the guidance kit by use of the Common Munitions Bit Reprogramming Equipment (CMBRE). A BIT will be run upon breakout (either before assembly or after) and before repackaging of the kit. JDAM program intends to ship the “defective” kit directly to the manufacturer who will “test” the unit and if confirms a warranty failure ship a new kit back to the user.

4.3.9.5 The Naval Air Warfare Center Weapons Division, (NAVAIRWARCENWPNDIV) is the maintenance engineering activity for most weapons system material. The assigned maintenance activity will coordinate with COMNAVAIRSYSCOM (AIR-3.1) and take corrective action on problems detected as a result of the warranty program. This shall be in conjunction with the maintenance engineering assignment and the Airborne Weapons Corrective Action Program.

4.3.9.6 NAVAIRWARCENWPNDIV is the collection activity for missile material data. The activity will collect, store, and provide data upon request from COMNAVAIRSYSCOM in support of the airborne weapons warranty implementation program.

4.3.9.7 At the request of COMNAVAIRSYSCOM, weapons quality engineering centers provide engineering support in the resolution of problems that have possible warranty implications.

4.3.9.8 Organizational, intermediate, and depot level maintenance activities shall implement specific warranty process actions as directed in technical manuals, instructions, and COMNAVAIRSYSCOM warranty implementation plans.

4.3.10 Repair Part Procurement. COMNAVAIRSYSCOM is responsible for ensuring that procurement of spares and repair parts are based on future workload planning as well as historical demand. As part of this program, weapons configurations, which are known to require significant repair part replacement, are identified. The requirements are incorporated into COMNAVAIRSYSCOM material planning studies and workload planning documents.

4.3.11 Depot Level Maintenance

4.3.11.1 The primary objective of depot maintenance is to sustain weapons systems and end items in a state of operational readiness consistent with the mission requirements of the operating or tactical units at the least total cost. Depot maintenance programs should be aligned at all times with the approved forces and their attendant operating requirements. Criteria for the establishment and retention of a depot maintenance capability must be based on supporting the workload demand created by the approved weapons or end item equipment inventory, as well as considering economic factors and mobilization and combat support planning requirements.

4.3.11.2 Programming for depot maintenance must treat weapons and equipment end items as systems rather than

as commodity groupings of items. Continuous program updates are required to:

- a. Ensure current status.
- b. Facilitate consideration of alternative approaches for depot maintenance support.
- c. Maintain balance between planned workload and approved maintenance resources.
- d. Facilitate quantitative evaluation of changes in maintenance resources that may result from major force changes.

4.3.11.3 In order to accomplish these efforts, as well as to determine and distribute workloads in a timely manner, automated data systems should be used to the maximum extent possible.

4.3.11.4 As Navy weapons systems and equipment become more complex and modular, the support and readiness needs of the operating forces increase. These needs result in a corresponding increase in the number, value, and significance of repairable items. Repairable work comprises an important segment of the workload of all major Navy industrial activities. Component rework is a major contributor to the effectiveness of the organic depot maintenance support base for many weapons and aircraft. Also, in support of Government policy, a large portion of repairable rework is accomplished through commercial contracts and interservice agreements.

4.3.12 Programming and Budgeting for Depot Level Repairables

4.3.12.1 The programming and budgeting for support of depot level repairables continues during the life cycle of the weapons system or equipment. Some major Navy weapons systems are designated for operational use for up to 30 years. Also, support of Foreign Military Sales (FMS) weapons systems usually occurs in parallel with their introduction into the fleet, but can extend many years beyond fleet phase-out of the systems.

4.3.12.2 The programming phase of the Planning, Programming, and Budgeting System translates approved concepts and objectives contained in the Secretary of Defense's guidance and the Department of the Navy's plans into time-phased resource requirements of manpower, funding, and material.

4.3.12.3 Requirements for depot level repairables procurement, repair requirements, and their supporting Op-

eration and Maintenance, Navy (O&MN) appropriations are developed and reviewed within the programming process. The inventory manager is responsible for preparing the budget backup material, but the final budget submitted to Office of Secretary of Defense (OSD) and the administration of funds during budget execution are controlled by the systems commands.

4.3.13 Depot Repair

4.3.13.1 The primary determinants of repair part or component availability are the funding levels approved for the procurement of piece parts and the repair of components.

4.3.13.2 Principal items, such as aircraft engines, weapons components, gun mounts, etc., are funded by the procurement appropriation Aviation Procurement, Navy (APN), Other Procurement, Navy (OPN), and Weapons Procurement, Navy (WPN). Secondary items managed by Naval Ammunition Logistics Center (NAVAMMOLOG-CEN) are primarily funded by the Navy Stock Fund (NSF).

4.3.14 Depot Repair Funding

4.3.14.1 The repair of depot level repairable components is an important element of the overall management of repairables. Depot repair will, on the average, generate a ready-for-issue replacement for one-third the cost of new items and at a significantly reduced leadtime.

4.3.14.2 The systems commands balance the availability of skilled personnel, industrial capacity, and funds to maximize the productivity of the depots. Depot level repairables serve as the principal source of replenishment stock.

4.3.14.3 The repair of most NAVAMMOLOGCEN managed repairables is financed by the NSF. COMNAVAIR-SYSCOM receives a quarterly allocation of funds from the Naval Supply Systems Command (COMNAVSUPSYSCOM) and suballocates funds to the Naval Aviation Depot Operations Center (NADOC), Patuxent River, MD, for organic repair and to NAVAMMOLOGCEN for commercial and interservice repair.

4.3.14.4 The repair of most NAVAMMOLOGCEN managed repairables is financed by the NSF. COMNAVSUPSYSCOM issues quarterly allocations to NAVAMMOLOGCEN based upon approved apportionment from OSD. Since the NSF manager has authority to reprogram within the fund, he/she has the capability to

trade off between procurement and repair of depot level repairables.

4.3.15 Navy Stock Fund/Appropriation Purchase Account

4.3.15.1 NSF is a working capital fund. Its basic capital assets were provided from an appropriation made by Congress. NSF is a revolving fund which finances the purchase and maintenance of stocks of common supply items required for support and operation of the Navy (expense type items). The NSF budget is based upon customer orders. The solvency of the fund is dependent on the receipt of a customer order and a subsequent sale of the material. Procurement computations for stock fund items are based primarily on previously recorded demands, new items, and engineering estimates.

4.3.15.2 NSF cash decreases when vendors are paid for material purchases which enter the system. Conversely, NSF cash increases when material is "sold" to Navy customers. In addition, items with high value inventories are intensely managed and are subjected to semiannual stratification procedures so as to eliminate replacing unneeded quantities of these items. The stratifications may also free up NSF funds for the procurement of new items or larger quantities of other items, or for covering losses to the fund. If after all of this, there is still a need for additional on-hand funds, COMNAVSUPSYSCOM can submit a substantiated request and the on-hand cash can also be increased by OSD or the Office of Management and Budget if it is available in one of the other OSD-managed funds. If excess funds are not available for transfer from another OSD-managed fund, they can only be obtained through the congressional appropriation process.

4.3.15.3 Since the primary source of ready-for-issue replacement depot level repairables carried in the NSF is repaired carcasses, the least costly and fastest method of providing ready-for-issue depot level repairables is to recover carcasses and expedite their repair and return to the supply system. For this reason, the following policy has been established: when a customer requisitions a ready-for-issue replacement from the NSF and indicates through the advice code that a carcass will be returned to the supply system, the customer will be charged a net price. However, if the advice code indicates that no carcass will be turned in, the requisitioner will be charged the full standard price.

4.3.15.4 Appropriations Purchase Account (APA) material consists of items procured with funds from designated appropriations, e.g., Aircraft Procurement, Navy (APN), Other Procurement, Navy (OPN), and Weapons Procure-

ment, Navy (WPN). APA material, when required for a specific customer's job, is requisitioned from the supporting supply department or center and issued to the customer. When authorized by a funding document or by direction of the NADOC or the inventory manager, APA government furnished material inventory items may be used without reimbursement. Authorized issues will be made on the basis of a material issue document coded by the supply department or center as APA-Government Furnished Material (GFM). The material will be recorded and controlled in APA and will be reflected as a statistical charge to an authorized nonreimbursable customer.

4.3.15.5 DoD and Navy material carried and used by the Navy is placed into inventory management groups. The groups are identified by the two-character cognizance symbols that precede the national stock number. Cognizance symbols are explained in greater detail in paragraph 4.3.30 of this chapter.

4.3.15.6 Consumable Material Management Stock Funds. The NSF provides a means for managing, financing, controlling, and accounting for material, supplies, and equipment. It serves as a means to improve financial control of the consumption of material through budgeting, financing, and accounting for the use of such material.

4.3.15.7 The NSF finances the inventory point control procurement of most of the Navy's centrally managed consumable spares and repair parts and finances the reimbursement required when Defense Logistics Agency (DLA) and general services administration items are ordered and placed in Navy inventory. The NSF is a working capital or revolving fund. The capital to acquire the replacement stock is provided by reimbursement for all issues (sales) to the customer from the O&MN funds. In this respect it differs from APA material that is issued without charge to the customer's O&MN fund and is statistically charged to the customer only under specific circumstances.

4.3.15.8 Most material procured and stored in the Navy supply system and issued for operations and maintenance purposes is NSF-authorized to be carried in the Navy Stock Account. Generally, this includes consumable material, relatively minor items of equipment, and parts used in the manufacture, assembly, or repair of end items, although it also includes fuel, clothing, and provisions.

4.3.16 Designated Overhaul Point

4.3.16.1 The designated overhaul point, whether it involves a qualified contractor of a specific activity in the Navy or other military service, must be established by the

estimated date of first repair induction and must contain the acquired depot repair capability and capacity. After a period of experience with the depot level repairable, any changes in the predicted demand must be updated and available repair capability and capacity must be adjusted, as deemed necessary.

4.3.16.2 Eight-Quarter Forecast. This forecast will be updated quarterly for the Naval Sea Systems Command (COMNAVSEASYSYSCOM) and Naval Air Systems Command (COMNAVAIRSYSCOM), and will include estimated Space and Warfare Systems Command and component repair requirements in quarterly increments by national stock number and by designated overhaul point. Inventory control points will use the 8-quarter forecast to substantiate funding requirements submitted to the repair fund sponsors. Systems commands will use this forecast to substantiate funding requirements submitted to the repair fund sponsors. Systems commands will also use this forecast to develop a resource plan to assure sufficient test equipment and piece part requirements are available at certified designated overhaul points when the repair requirements materialize.

4.3.16.3 Five-Year Forecasting. The 5-year forecast (or 20-quarter forecast as it is also named) is used to meet the requirements of the DoD programming system in providing detailed justification for Navy Component Repair Defense Program. The inventory control points will prepare this forecast quarterly in conjunction with the 8-quarter forecast and forward it to the applicable systems command and program manager. For depot level repairables, systems commands and operational managers will incorporate this forecast into the depot level maintenance program in the appropriate annex of the O&MN Program Objective Memorandum submission. Systems commands will also use this forecast to estimate the size of the depot workload, justify adjustments to the Depot Utilization Plan, identify parts and equipment requirements, establish workforce levels, and project material requirements and costs.

4.3.17 Depot Repair Scheduling

4.3.17.1 It is the Navy policy that inventory control points and repair activities adopt the shortest repair requirements review cycle possible, with the ultimate objective of adopting a bi-weekly cycle. Studies have shown that a bi-weekly cycle is optimal because it offers the following advantages:

a. Increased sensitivity to changes in supply system requirements.

b. Opportunity to frequently update the repair priority (urgency of need).

c. Fewer interim requirements that need off-line, manual processing.

d. Better utilization of materials, funds, and available repair capacity.

4.3.17.2 It is also Navy policy to recompute and restratify repair requirements into current urgency-of-need levels during each review cycle, since this method is more sensitive to changes in fleet requirements.

4.3.18 Repair of Weapons Aeronautical Components

4.3.18.1 Repair requirements governing the scheduling and induction of repairable aeronautical components are managed under the programs described in the following paragraphs.

4.3.18.2 Hi-Burner. Items in this program are selected by COMNAVAIRSYSCOM and NAVAMMOLOGCEN based on a high historical volume of system demands and rework expenditures or known unit criticality. This program is intended to provide a level flow of high repair cost or high demand items through depot repair facilities, thereby achieving production line efficiencies. It also enhances the planning and use of repair parts support, training, and manpower.

4.3.18.3 Long-Term Warranty Program. The Long-Term Warranty Program was established for aircraft systems that are experiencing technical or design instability and increased repair costs. A selected number of the repairables of the system population are placed into the Reliability Improvement Warranty Program and operations data are recorded by manufacturer's serial number. The technical data flows to the Naval Aviation Depot's Engineering Analysis Center, where engineers monitor installation and removal data, flying hour data, and failure data to develop reliability trends, maintenance history, and repair status. Based on the analysis of these data, minor design changes and modifications are performed on the units.

4.3.18.4 1R Cognizance Repair Program. The 1R Cognizance Repair Program is managed by NAVAMMOLOGCEN in coordination with the NADOC. Normally, 1R cognizance fleet level repairables and consumables are not required at the depot level, but depot repair may be required in exceptional situations. NAVAMMOLOGCEN will perform scheduling via a message to the designated supply point and the naval aviation depot. The naval aviation depot will provide a line item repair cost estimate to the supply officer, who will then approve the repair cost

or request NAVAMMOLOGCEN approval if the cost exceeds 100 percent of the procurement cost of the item. After approval, the supply officer will provide the carcass and NSF funds to the naval aviation depot to perform the repair.

4.3.18.5 Government Furnished Equipment (GFE) Repair Program. The GFE repair program is funded by NAVAIRSYSCOM (procurement appropriation) and managed by the NADOC. This program supports the depot level repairables that the Navy provides to equipment contractors for installation in new production equipment. Repair requirements will be submitted to the NADOC by the Naval Plant Representative Office at the contractor's plant. NADOC will authorize the repair of NAVAIRSYSCOM-managed items. NAVAMMOLOGCEN will authorize the items that it manages.

4.3.18.6 FMS and Interservice Repair Programs. Each FMS case and depot maintenance interservice agreement will constitute a separate, specific agreement made with the foreign government or other service. It is separately funded and assumes the same status as an individual contract.

4.3.19 Inventory Managers. Whether for repairable or consumable items, inventory managers have the same goal: to have it when it is needed by Navy customers.

4.3.19.1 Inventory managers are responsible for inventory management of each item of supply. Inventory managers include NAVAMMOLOGCEN, inventory control points. These inventory managers participate in provisioning new weapons systems, purchase spares and repair parts, compute and transmit repair requirements to designated overhaul points, and manage the commercial and interservice repair of components.

4.3.19.2 The inventory control points perform their mission using centralized computer systems which are connected via terminals to supply support and maintenance facilities. This communication network allows the daily processing of repairable transactions. In this way, NAVAMMOLOGCEN and other inventory managers can manage their inventories or repairables in the wholesale supply system. The Conventional Ammunition Integrated Management System (CAIMS) is used by inventory control points for management of ammunition items.

4.3.20 Stockage Policy. DoD policy states that support activities will provide maximum material support for approved forces under an inventory stockage concept that minimizes supply response time. Stockage for each material category will be provided by achieving a balance

between required supply performance and economy consistent with peacetime operations and war readiness considerations. One aspect of this concept divides all DoD material into the following two levels of supply: wholesale and retail.

a. The wholesale level of supply consists of asset inventories (regardless of their funding source) over which an inventory control point normally exercises unrestricted control to meet worldwide inventory management responsibilities. At the wholesale level, stockage decisions will take into account both the actual demand and the essentiality of the stockage to a selected weapons system.

b. The retail level of supply includes supplies and materials (regardless of their funding source) held below the wholesale level. Each retail inventory is justified on the basis of its specific support mission. DoD components will develop criteria that promote minimal retail stockage. Stockage of items on other than a demand basis will be minimized.

4.3.21 Navy Inventory Levels. The Navy material support mission is accomplished at three levels of inventory. The first level is the consumer level of supply, consisting of materials carried by the individual activities. The second or intermediate level of supply is the material stocked onboard certain ships of the combat logistics force and at designated shore activities. There is no combat logistics force echelon of resupply for aviation-peculiar materials. The third level of supply is the wholesale level. Those materials used for resupplying the operating forces are stored at supply centers and depots, naval weapons stations, shipyards, and air stations.

4.3.22 Allowance Lists

4.3.22.1 Whatever their titles, the basic purpose of all allowance and load lists is to define the materials required (e.g., repair parts, repairables, operating space items, special tools, and consumables) for that echelon of supply to achieve an authorized standard of logistic readiness. The Chief of Naval Operations (CNO) has authority for coordinating the development of shipboard allowance lists. CNO has also been assigned responsibility for ensuring that defined allowances are funded and that they are substantially complete and onboard Navy ships prior to their initial deployment. The systems commands have been directed to develop, issue, and implement supporting policies, methods, and procedures to ensure compliance with CNO's policies.

4.3.22.2 Coordinated Shipboard Allowance List. The Coordinated Shipboard Allowance List (COSAL) depicts authorized onboard depot level repairables, field level

repairables, and consumables to support shipboard equipment and components, and is printed and distributed by NAVAMMOLOGCEN. For new construction, several (up to eight) increments are issued; at the end of overhaul minus 5 months, indices are issued.

4.3.22.3 Aviation Consolidated Allowance List. An Aviation Consolidated Allowance List is an allowance list for CVs, LHAs, and marine aviation logistics squadrons which includes a range and depth of items required to support a specified deckload of aircraft for a specified endurance period, taking into account the available organic repair capability. The Aviation Consolidated Allowance List is printed and distributed by NAVAMMOLOGCEN. It constitutes the level of supply applicable to aeronautical materials for support of aircraft afloat and ashore.

4.3.22.4 Coordinated Shore Based Allowance List (COSBAL). The COSBAL is an allowance list tailored to suit the material support requirements of an individual shore activity or group of activities. The COSBAL, which is a compilation of Allowance Parts Lists, is normally prepared by NAVAMMOLOGCEN when:

- a. The shore activity has a critical mission.
- b. The activity has a special operating requirement and is located far from a supply source.
- c. Initial outfitting is required for a newly established activity.
- d. An activity's mission (and, therefore, its equipment configuration) undergoes a major revision, making a re-outfitting or major stock adjustment necessary.
- e. COSBALs are provided to designated shore activities every 3-years.

4.3.22.5 Fleet Issue Load List. The Fleet Issue Load List is derived from the Fleet Issue Requirements List, which identifies the predicted material requirements for the intermediate level of forward deployed fleet forces over a 90-day period. The Fleet Issue Load List is positioned in combat stores ships (AFS) and resupply point at the Naval Supply Center, Norfolk, VA.

4.3.23 Fixed Allowances for Depot Level Repairables and Field Level Repairables

4.3.23.1 Fixed allowances are established in accordance with OPNAVINST 4441.12B (NOTAL) to improve the management of authorized stock levels for depot level and field level repairable items. The field allowance concept is designed to guarantee an equitable distribution of re-

pairable assets and, through the strict discipline employed, ensure that adequate supplies are maintained by the operating forces.

4.3.23.2 A fixed allowance will be established by the program support inventory control point and negotiated with the fleet or type commander and retail inventory stocking activity, as appropriate, for each repairable item or family authorized for stockage at each operating site. The fixed allowance will identify both the range and depth authorized and will be based on factors such as failure rate, experienced demand, turn around time, mission essentiality, Maintenance and Material Management (AV-3M) data, and other data necessary to ensure that operational commitments will be met. Fixed allowance is regarded as the maximum authorized stock level. Retention of depot level repairables and field level repairables above the fixed allowance is not authorized. Necessary controls and procedures will be exercised by fleet commander in chiefs or type commanders to ensure that the fixed allowance is not exceeded.

4.3.23.3 Activities not having established allowances or load lists, and having a need to stock repairables will submit requests to the cognizant inventory control point to approve an allowance of required repairables. The requests are subjected to fleet commander in chief or type commander approval.

4.3.24 Asset Reporting Requirements

4.3.24.1 Historically, lack of visibility of the total inventory has been one of the greatest obstacles to cost-effective management of depot level repairables. Fortunately, the problems with asset reporting which cause the lack of visibility are being overcome with procedural improvements, improved communication capabilities, and the computerization of operations at the inventory control point, designated overhaul points, designated supporting point, and customer levels. The improvements are making it possible for the inventory control points to gain broader views of both the wholesale and retail data bases and to disseminate data in a timely manner to the diverse organizations responsible for fleet support.

4.3.24.2 Designated Support Point Reports. The Military Standard Transaction Reporting and Accounting Procedures (MILSTRAP) provides visibility of repairable assets in the wholesale distribution system. Reporting is generally accomplished by means of daily transaction item reports submitted by designated supporting points, which provide changes in item stock status. In addition to reporting supply effectiveness, the inventory control points monitor designated supporting point performance and the average time it takes the activity to ship repair-

ables to other designated supporting points. The time is measured from the date of the requisition or redistribution order until the date of the receipted transaction item report. Designated supporting point averages are compared with the system average. The inventory control point initiates corrective action when a designated supporting point's performance is significantly longer than the system average.

4.3.24.3 Inventory Control Point Reporting. The inventory control point's mission is to produce reports based on transaction item reporting responses from commercial and organic designated overhaul points, designated supporting points, and customers. The reports are reviewed and action is taken within assigned areas of responsibility to correct conditions contributing to reduced repairables management effectiveness.

4.3.24.4 Commercial Designated Overhaul Points. The effective management of commercial repair efforts depends on monitoring repairables while they are at contractor facilities and, therefore, out of the Navy's custody. An automated contractor reporting system records timely and accurate information on Navy assets shipped to contractor plants for repair costs along with use of government furnished material and survey data. In addition, it measures the various increments of the commercial repair cycle and monitors and tracks the repairable from the time it is received until it is returned to a Navy activity in a ready-for-issue state.

4.3.24.5 Repair Turnaround Time. Through DoD 4100.33 of 9 September 1985 (NOTAL), the DoD has issued the segments which comprise the repair cycle time along with their generic definitions to all defense services. The segments include retrograde, administrative, and depot maintenance times. Although retrograde time is considered part of the total repair cycle time by DoD, it is not included as part of Navy-calculated turnaround time because the inventory control points do not have total visibility of the assets in that segment of the pipeline.

4.3.25 Depot Level Repairable Movement and Reporting Procedures

4.3.25.1 The turn-in of not ready-for-issue depot level repairables is mandatory if repair is beyond the capability of organizational and intermediate maintenance level activities. Depot level repairables are identified by material control codes E, G, H, Q, and X, and are listed in the Master Repairable Item List (MRIL). Because of the "full accountability" (or "one-for-one exchange") requirement for depot level repairable materials, comprehensive retrograde management controls have been established. Expedient turn-

in is required to reduce retrograde "pipeline" inventory requirements.

4.3.25.2 All activities will use MILSTRIP/MILSTRAP procedures to prepare and submit requisitions in accordance with current type commander and inventory control point instructions for depot level repairable movement.

4.3.25.3 Retrograde control files are created based on requisitions and issue transactions that contain advice codes indicating unserviceable repairables are being turned in. Other advice codes identify cases in which turning in an unserviceable item does not apply. Activity performance is monitored to guard against the improper use of advice codes in requisitions.

4.3.25.4 At the local level, procedures for the effective control of departmental turn-ins are prescribed by NAVSUPSYSCOM to ensure that replaced depot level repairables which cannot be repaired locally are either expeditiously returned to the supply system in accordance with MRIL instructions or are certified to be missing or destroyed.

4.3.25.5 Specialized support procedures apply when commercial activities supply interim support materials for new systems or components before the supply system can assume this responsibility. In essence, the repairable items are returned to and shipped from commercial rework facilities. However, visibility is maintained over the assets by the inventory control point.

4.3.25.6 Issue and Material Movement Priorities. The DoD Uniform Material Movement and Issue Priority System (UMMIPS) will be used to ensure that material issue and movement requirements are processed in accordance with the military importance of the requiring activity, the urgency of need, and specific material management considerations. The UMMIPS, a Force Activity Designator (FAD) which describes a unit's status (combat, combat ready, etc.), is combined with the Urgency of Need Designator, which categorizes the requirement by criteria (immediate, routine, etc.) to determine the priority designator for each unit. See OPNAVINST 4614.1F (NOTAL) for additional information on UMMIPS.

4.3.25.7 Turn-In Procedures. To expedite the return of non ammunition, not ready-for-issue depot level repairables through the supply system, the advanced traceability and control (ATAC) program was developed. ATAC provides for the return of all not ready-for-issue depot level repairables, with certain exceptions, to a centralized depot level repairable processing location on the east or west coast. (NAVSUPINST 4421.20 (NOTAL) provides a detailed exception list.) The locations are called hubs.

The hubs provide full technical screening of receipt, packaging and preservation, transaction item reporting, and consolidated shipping to the appropriate designated supporting point or designated overhaul point. The three geographic hub sites and their areas of support are listed below:

a. Fleet and Industrial Supply Center (FISC) Norfolk. All Continental United States (CONUS) activities east of the Mississippi River and on the Gulf Coast (except for Marine Corps activities services by Marine Corps Air Station Cherry Point), and all Outside Continental United States (EX-CONUS) activities and afloat forces including the Mediterranean.

b. FISC San Diego. All CONUS activities west of the Mississippi River and all Pacific Ocean EX-CONUS and afloat forces including the Philippines and the Indian Ocean.

c. Marine Corps Air Station (MCAS) Cherry Point. All Marine Corps activities which are provided geographic support by MCAS Cherry Point.

4.3.25.7.1 To further assist the fleet in returning unserviceable depot level repairables to the geographic hubs, transportation collection points called nodes have been established at Naval Air Station Sigonella, Sicily,

4.3.25.7.2 The ATAC retrograde program provides the fleet user with simple instructions for addressing retrograde and transaction reporting for carcass tracking purposes on all material from any user to any destination. For those activities which have an on-site transportation agent, daily pickups of depot level repairables at the end users' location are made by the agent and shipped to a geographic hub.

4.3.25.7.3 One of the major benefits to the end user is a simplified MRIL. That is achieved through the fact that the only shipping address for depot level repairables would be the geographic hub that services the region. The assets will then be either transshipped to the designated overhaul point or designated supporting point for repair or stowed if the hub represents the designated supporting point.

4.3.26 Master Repairable Item List

4.3.26.1 The MRIL is a catalog of Navy-managed repairable items, including depot level repairables and field level repairables.

4.3.26.2 The MRIL simplifies the identification and movement of repairables to be processed for reissue. The proper use of the MRIL by operating activities will result

in improved material availability and dollar savings through reduced inventory investments.

4.3.26.3 The primary purpose of the MRIL is to provide the data required for disposition of not ready-for-issue repairables, and:

a. Items to be repaired at the organizational and intermediate levels.

b. Items to be returned to depot level repair if beyond beyond the capability of organizational and intermediate level maintenance and repair.

c. Identification of designated supporting points or designated overhaul points, Navy interservice, or commercial activities.

4.3.26.4 For ordnance material (2E, 2T, 4E, 4T, 6T, 8E, 8U, and 8T COG's), a separate ordnance MRIL provides disposition and special handling instructions. The ordnance MRIL is updated monthly and published by the Naval Ammunition Logistics Center (NAVAMMOLOG-CEN) and available on web site: www.nalc.navy.mil.

4.3.26.5 For ordnance items not reflected in the ordnance MRIL, request disposition or special handling instructions from the inventory manager at the NAVAMMOLOGCEN. The NAVAMMOLOGCEN web site www.nalc.navy.mil provides guidance to identify the commodities inventory manager.

4.3.27 Cannibalization

4.3.27.1 Cannibalization is a maintenance option that is considered a drastic measure to only be utilized as a last resort. The need to cannibalize highlights a non-stock posture in the supply system. This non-stock posture in supply system can be at any higher maintenance echelon of any lower indenture spare or repair part of the end item being cannibalized, but still usually a failure either of procurement/replenishment or repair of repairables (ROR). Cannibalization, at a minimum, doubles the total manhours required to perform the repair action than if the cannibalized item was available from supply system. It is also an empirical fact of reliability/maintainability that cannibalization causes additional failures due to at least doubling the number of removal/replacements, including attaching hardware that are one-time use limited cycle items (e.g. gaskets). However, regardless of the above problems associated with cannibalization, it is still sometimes the best solution (option) to the non-stock posture in the supply system when absolutely necessary to meet specific operational commitments.

NOTE

Salvage of condemned or declared excess items is not considered cannibalization (see paragraph 4.3.27.2h)

4.3.27.2 If during the maintenance or check-out of an item, the required spares and/or repair parts are not available in time to meet workload schedules in support of specific operational commitments, limited cannibalization of like items awaiting maintenance will be permitted upon authorized written approval. Since cannibalization is a last resort to meet operational commitments, permission to cannibalize may be sought only under the following conditions:

a. There will be no cannibalization between Foreign Military Sales (FMS) assets, other military services (e.g. Air Force, Army, Coast Guard, etc) assets and/or Navy/Marine Corps assets without prior written agreement of the APML.

b. There will be no cannibalization below the authorized level of maintenance of the activity performing the cannibalization without prior written approval of the APML.

c. Required spares and/or repair parts are not available through the normal supply channels.

d. A valid milstrip requisition has been submitted to the supply agency responsible for furnishing the spares and/or repair parts; and the notification has been received from that agency that the required spares and/or repair parts will not be received in adequate quantity or time to meet workload schedule in support of specific operational commitments; however, said valid milstrip requisition will remain in force for replenishment of the cannibalized item (s).

e. The number of spares and/or repair parts obtained by cannibalization will only be that quantity required to satisfy specific operational commitments not covered in time by the supply system as specified in subparagraphs 4.3.28.2c and d.

f. The end item inventory manager has not designated the item (to be cannibalized) for another activity or purpose (e.g. QDR Exhibit, etc)

g. Applicable maintenance data will be recorded on the end item (s) and related spares and/or repair parts cannibalized in accordance with applicable Maintenance Data Collection System (MDCS) procedures, cannibalization request, and maintenance activities Quarterly Cannibalization Summary.

h. The cannibalization procedures covered in this paragraph do not apply to items which have been declared excess or beyond economical repair, and in accordance with applicable Quality Assurance (QA) procedures, are salvaged for usable spare and repair parts; however, usage milstrip regulations shall be supplied to the cognizant supply agency to provide usage data for all spare and repair parts salvage from a condemned or excess unit.

i. For items under warranty, or exhibit for a Deficiency Report (DR), care shall be exercised in cannibalization so as not to invalidate the warranty or the DR exhibit, unless required by specific operational necessity.

4.3.27.3 When cannibalization is required to meet workload schedule in support of specific operational commitments, the maintenance personnel requesting authority to cannibalize, shall submit a written request, validated by operations/maintenance planning officer, supply officer, and the ammunition distribution and control officer, (AD&C) to the ordnance officer (or equivalent) for approval (see Figure 4-3-2 Sample Cannibalization Request). At a minimum the local Cannibalization Request shall contain the following:

a. Activity

b. Date of requested and required due date

c. Weapon system

d. End item identification (including nomenclature, P/N, NALC*, COG*, NIIN*, S/N and Condition Code) for both end items being cannibalized from and for. (* If applicable)

e. Spare and/or repair parts identification (including nomenclature, P/N, NALC*, NIIN*, S/N or quantity of non-S/N items, condition/purpose codes; and complete milstrip requisition numbers, status, and estimated due dates) from both end items be cannibalized.

f. Warranty/DR Exhibit Impact

g. Operational Impact (if cannibalization is not performed).

h. Validations (Signature and Codes for supply and/or AD&C, and Operations/Planning.

i. Approval (Signature and Code of approving official).

4.3.27.4 If an item which spare and/or repair parts have been cannibalized is transferred by the cannibalizing maintenance activity to another maintenance activity, the following requirements apply:

a. The failed item shall be reassembled and transferred intact, and accompanied by replacement milstrip

requisitions, (i. e. generated and funded by the cannibalizing maintenance activity by submitting a document modifier to the original milstrip requisition(s) modifying the supplementary address and changing the signal code to "J") for the missing requisitions for all installed/reassembled failed cannibalized cannibalized and/or repair parts.

b. The exact failure must be noted on the MIL-STD-129 tag/label and on the accompanying maintenance documentation, which shall include a copy of all milstrip requisitions generated in accordance with paragraph 4.3.27.4.

4.3.27.5 Since cannibalization is normally a drastic measure and highlights a non-stock posture in the supply system, maintenance activities are required to submit a Quarterly Cannibalization Summary of all approved Cannibalization Request, submitted under paragraph 4.3.27 to the FST CLE with a copy to the APML, workload managers, inventory managers, and PSICP PMs (program managers). The maintenance activities cannibalization summary may be submitted via "E-Mail" (see Figure 4-3-3 Sample Cannibalization Summary) for those activities with access and by letter for those activities that do not have electronic mail access. At a minimum the Cannibalization Summary shall contain the following:

- a. Activity: (Maintenance Activity Providing Cannibalization Summary).
- b. Time Period: (Quarter and Fiscal Year Summary covers).
- c. Weapons System Nomenclature: (Weapon System Item (s)).
- d. NSN: (including Cog Code, Stock Class, NIIN, and (NALC/DODIC if applicable) of spare or repair part cannibalized).
- e. Part Number: (Part number of spare or repair part cannibalized).
- f. Nomenclature: (Nomenclature of spare or repair part cannibalized)
- g. Quantity: (Quantity of each spare part or repair part cannibalized during the time period of cannibalized summary).

h. Milstrip Requisition Number: (Complete Milstrip requisition number (s) for quantity of each spare or repair part cannibalization summary).

i. Remarks: (Include any pertinent data; e.g. cannibalized end item/spares/repair part came from or went to a DR exhibit or were under warranty and the impact thereof, non-supply driven cannibalization actions; cannibalized end items sent to another activity for repair etc).

NOTE

Maintenance activities may be requested to provide copies of approved Cannibalization Request (s) if APML requires additional backup data for cannibalization reviews on selected part numbers. APML will review Cannibalization Summary periodically.

4.3.28 Supply Responsibilities

4.3.28.1 Readiness is achieved by following sound management practices in supply support areas that may determine the degree of readiness.

4.3.28.2 Supply responsibilities include:

- a. Proper management of asset inventories.
- b. Proper financial management of repairables.
- c. Accurate determination of allowances.
- d. Timely retrograde of not ready-for-issue depot level repairable material.
- e. Productive communication and coordination between maintenance and supply elements.
- f. Full utilization of available resources to repair aeronautical material.
- g. Initiation of requests to improve maintenance capability above that presently available as authorized by the maintenance plan.
- h. Timely investigation of material unsuitability prior to stock exhaustion.
- i. Application of procedures, policies, regulations, and disciplines established for support of the operating forces.

		DATE: (DD-MM-YY)
SUBJ:	CANNIBALIZATION REQUEST FOR (WEAPON SYSTEM)	
SENDER:	PERSON/ACTIVITY	
TO:	ORDNANCE OFFICER (OR EQUIVALENT)	
CC:	OPS/MAINTENANCE PLANNING OFFICER	
	SUPPLY OFFICER	
	AD&C OFFICER	
	NAVAIRWARFARECECENWPNDIV/NAVAIRSYSCOM LOCAL WORKLOAD REPRESENTATIVE	
1.	REQUIRED DUE DATE	(DD-MM-YY)
2.	END ITEM TO BE CANNIBALIZED:	
	FROM	FOR
	A. NOMENCLATURE	
	B. NSN: (COG/CLASS/NIIN/NALC*)	
	C. PART NUMBER	
	D. SERIAL NUMBER	
	E. CONDITION/PURPOSE CODE	
3.	SPARE OR REPAIR PART TO BE CANNIBALIZED:	
	FROM	FOR
	A. NOMENCLATURE	
	B. NSN: (COG/CLASS/NIIN/NALC*)	
	C. PART NUMBER	
	D. SERIAL NUMBER (OR QUANTITY OF NON-SERIALIZED PARTS)	
	E. CONDITION/PURPOSE CODE	
	F. MILSTRIP REQUISITION NUMBER & STATUS (INCLUDES ESTIMATED DUE IN IF NOT CANCELED BY ICP)	
4.	OPERATIONAL IMPACT:	
5.	WARRANTY: AND/OR DR IMPACT	
6.	VALIDATION: (SIGNATURE, NAME, CODE AND DATE)	
	A. OPS/PLANNING	
	B. SUPPLY*	
	C. AD&C*	
7.	APPROVAL: (SIGNATURE, NAME, CODE AND DATE)	
	(* IF APPLICABLE)	

Figure 4-3-2. Sample Cannibalization Request

j. Adequate material planning and technical research by supply and maintenance functions.

k. Development and maintenance of a hazardous material authorized use list and ensuring that only authorized materials are acquired.

l. Implementation of procedures to control, track, and reduce the variety and quantities of hazardous materials in use, in storage, or disposed of as hazardous waste.

m. Development and implementation of an active hazardous/consumable material shelf life extension program based on the requirements in FED-STD-793 (Depot Storage Standards).

4.3.28.3 Supply department functional responsibilities include:

a. Maintaining operating support inventories and fixed allowances for support of assigned operating forces.

b. Issuing, receiving, storing, and controlling all material assets carried in local stocks.

c. Recording customer demand, replenishing stock, adjusting allowances in response to demand patterns, and maintaining all associated records.

d. Performing technical research to convert manufacturer's part numbers to a national stock number and determining family group application. Also, reviewing the assigned SM&R code for non-stock-numbered material to determine proper procurement source, such as local purchaser, intermediate and depot level repair, or manufacturer. Repeated requests for intermediate and depot level non stock numbered items form the basis for a request to review SM&R code assignment.

e. Preparing the MILSTRIP requisition (or automated input) from the customer request.

f. Effecting complete on- and off-station material requisition processing.

g. Providing on-station pickup and delivery of all material.

h. Providing daily mechanized listings with complete supply status for all NMCS and PMCS and anticipated NMCS to both the organizational and intermediate levels in sufficient quantity to ensure adequate distribution. Data will be sequenced to expedite the daily validation process. Listings shall contain the following information as a minimum: document number, national stock number, including cognizant symbol, material condition code, special material identification code, unit of is-

sue and quantity, project and priority, nomenclature, status and routing identifier code of the activity submitting the status, job control number, work unit code, and originator code of the requisitioner.

i. Providing awaiting parts mechanized status listings to the intermediate level maintenance activity weekly. The listing shall contain the following information as a minimum: requisition number, national stock number, unit of issue and quantity, originator code of requisitioner, project and priority, job control number, nomenclature, work unit code, workcenter, status and routing identifier code of the activity submitting the status report.

j. Providing work stoppage mechanized status listings to organizational units weekly.

k. Validating NMCS and PMCS requirements daily and awaiting parts requirements at least weekly.

l. Maintaining a technical library for supply purposes containing supply and maintenance publications and directives, standard contractor and vendor drawings, military specifications, and modification directives.

m. Establishing, maintaining, and replenishing pre-expanded bins items.

n. Continuously reviewing material allowances and request adjustments as required.

o. Ensuring that supply personnel are familiar with the local maintenance organization and its directives.

4.3.29 Navy Supply System

4.3.29.1 The major responsibility of the Navy supply system is to provide material in support of operations and maintenance. Every effort will be made to have material located when and where it is needed. The intent is to make the relationship between the supplier and the user as simple and uncomplicated as possible within the boundaries of logistic directives published by higher authority. Navy stock is generally replenished on a system basis as a direct result of recorded usage and demand data, or on a program basis from precalculated usage. All naval elements, regardless of size and location, have an assigned activity to which they can submit requests for material. In the case of maintenance activities, this request starts at the organizational, intermediate, and depot levels of maintenance and flows to a designated point in the supply system. The UMMIPS assigns a FAD to all activities in the Navy establishment for determining priorities for material support. OPNAVINST 4614.1F (NOTAL) contains instructions for using the material priority system and assigning FADs. These instructions are implemented

DATE: (DD-MM-YY)

SUBJECT: CANNIBALIZATION SUMMARY: (QUARTERLY)
 SENDER: PERSON/ACTIVITY
 TO: FST CLE
 CC: APML
 NAVAIR WORKLOAD COORDINATOR
 NAWCWPNS PT. MUGU WORKLOAD MANAGER
 NAVAIR INVENTORY MANAGER
 NAVAIR SUPPLY SUPPORT MANAGER

1. ACTIVITY & TIME PERIOD OF SUMMARY

2. CANNIBALIZED ITEMS:

WEAPON SYSTEM NOMEN- CLATURE	NSN COG/CLASS/ NIIN/NALC*	PART NUMBER	SPARE OR REPAIR PART NOMEN- CLATURE	QUAN- TITY	MILSTRIP REQUISI- TION NUMBER	REMARKS
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(* IF APPLICABLE)

Figure 4-3-3. Sample Cannibalization Summary

by fleet commander and type commander instructions. The FAD is correlated with urgency of need to determine the priority assigned to requisitions. The priority assigned to material requisitions, not the project code, determines the speed with which a requisition must be filled by the supply system. UMMIPS abuse detracts from supply system responsiveness.

4.3.29.2 The Navy supply system is part of the Defense supply system. It procures, maintains, and distributes equipment, repair parts, and consumable inventory (except ordnance ammunition) to Navy consumers. The basic responsibility for providing support to meet user needs is the function of inventory control points, who in cooperation with the cognizant systems command and the users or customers, determine the individual supply support measures of Navy shore installations, determine the range and depth of items to be carried at these specific installations, and position the inventories. The complex of installations identified as designated support points is where the physical work of receiving, storing, and issuing of items takes place.

4.3.29.3 NAVAMMOLOGCEN is the primary inventory control point responsible for material support of airborne weapons and their related equipment. The specific weapon materials concerned are air launched weapons and weapons support equipment repairables, piece parts, bombs, rockets, fuzes, aircraft gun ammunition, pyrotechnics, cartridges and cartridge actuated devices, and aircrew escape propulsion systems. As inventory control point for designated airborne weapons material, NAVAMMOLOGCEN's responsibilities include:

- a. The procurement of material directly from industry or other government agencies.
- b. The allocation of COMNAVAIRSYSCOM-procured material to stock points.
- c. The distribution of materials to fill replenishment stock requirements.
- d. Referral of requisitions to stock points to meet end use requirements.
- e. Initiation of disposal actions for materials that are in excess of system requirements.
- f. Maintenance of airborne weapon material spares and spare parts catalogs.
- g. Determination of rework requirements of repairable airborne weapon material secondary items.

h. Development, issuance, and updating of initial outfitting allowances applicable to airborne weapons material.

i. Management of program support inventory control point activities for air launched weapons programs.

j. Maintenance of CAIMS as outlined in NAVSUP 724 (NOTAL).

k. Development of the allowance parts list and COSBAL for airborne weapons material.

4.3.29.4 NAVAMMOLOGCEN is the primary Navy inventory control point responsible for material support of the naval aviation maintenance program with respect to technical aviation material. Technical aviation material consists of repair parts and spare parts for aircraft, power plants, avionics, electrical, accessory, and meteorological equipment (common and peculiar). For airborne weapons, it includes guns and launchers. NAVICP's material mission is the program support of weapons systems, aeronautical equipment, and components under the design, engineering, and configuration control of COMNAVAIRSYSCOM. Certain supply items required to support COMNAVAIRSYSCOM aeronautical material programs may be under the management cognizance of other inventory control points. Supply support responsibility for these items is accepted by appropriate inventory control points and program information is provided by NAVAMMOLOGCEN to enable supply support to be provided. NAVAMMOLOGCEN's responsibilities for the items under their program support inventory control point cognizance include, but are not limited to:

- a. Computation of aviation material requirements in both range and depth.
- b. Budget development data for all assigned aviation material.
- c. Procurement of material directly from commercial industry or via other government agencies.
- d. Allocation of COMNAVAIRSYSCOM-procured material to fill replenishment stock requirements and the referral of requisitions to stock points to meet use requirements.
- e. Determination of system asset depot level rework requirements of all repairable components to be processed by organic, interservice and commercial rework sources.
- f. Development, issuance, and updating of Allowance Requirements Register of allowance and load lists.
- g. Conduct and coordination of provisioning conferences.

NOTE

The maintenance of item identification and cataloging data is the responsibility of the Defense Logistic Support Center, Battle Creek, Michigan.

4.3.30 Material Cognizance Assignment

4.3.30.1 For supply and financial management purposes, Navy material items are grouped into basic logistics categories which may include all or segments of a number of classes of material. Cognizance symbols are two-digit numeric and alpha codes. The numeric code designates the stores account, navy stock account, or APA of the item. The alpha code is used to designate the cognizant inventory manager who exercises Navy-wide technical management responsibilities over specified categories of material. The 13-digit national stock number is the standard means of identifying items in the Navy supply system. The Navy cognizance symbol usually precedes the national stock number when used in Navy publications or documents.

4.3.30.2 COMNAVSUPSYSCOM is responsible for the assignment of material cognizance symbols and for the maintenance of accurate and current cognizance symbol material descriptions. Navy inventory managers are responsible for conducting an annual review of material descriptions for assigned cognizance symbols and recommending changes to COMNAVSUPSYSCOM. COMNAVSUPSYSCOM will notify cognizant systems commands, fleet commanders (including reserves), and other activities of the transfer of cognizant items. That action is accomplished through issuing bulletins and notices, implementing instructions, or other media that initiate revisions to the Federal Supply Catalog, allowance and load lists, initial stock lists, technical manuals, and other related publications.

4.3.30.3 The following cognizance symbols are applicable to airborne weapons and are managed through use of the Conventional Ammunition Integrated Management System (CAIMS), NAVAMMOLOGCEN, and Defense Logistics Agency (DLA).

a. 2E cognizance material consists of conventional air ammunition and ordnance used on or launched from aircraft. These items are included in CAIMS under the inventory management of NAVAMMOLOGCEN, and are under the technical control of COMNAVAIRSYSCOM.

b. 4E cognizance material consists of air launched missile components and containers. Such items are in-

cluded in CAIMS, are under the inventory management of NAVAMMOLOGCEN, and are under the technical control of COMNAVAIRSYSCOM.

c. 8E cognizance material consists of air launched missiles, components, and containers or cradles. Such items are included in CAIMS under the inventory management and technical control of COMNAVAIRSYSCOM.

d. 1H cognizance material includes consumable repair parts in support of air launched missiles. The items are managed in the inventory through the NAVAMMOLOGCEN's uniform inventory control point system and are under the technical control of COMNAVAIRSYSCOM.

e. 7E cognizance material consists of repairable items in support of airborne weapons. The items are managed in the inventory through NAVAMMOLOGCEN's uniform inventory control point system and are under the technical control of COMNAVAIRSYSCOM.

f. 9 cognizance material items consist of consumable repair parts and certain items under the inventory management of the DLA or other services.

NOTE

Cognizance codes 2E, 4E, and 8E are in the APA. Cognizance codes 1H, 7E, and 9 are in the Navy stock account.

4.3.31 Hazardous Material Control and Management (HMC&M) Program.

4.3.31.1 Scope. This program is conducted in accordance with the objectives and guidance of OPNAVINST 5090.1B. Materials specified for use during maintenance of airborne weapons and associated equipment, which are hazardous or potentially hazardous materials, must be minimized and controlled from the design and technical documentation phase, through acquisition, and throughout the life cycle of the weapon. The primary controlling document for airborne weapons and associated equipment is NAVAIR 01-1A-75 (Airborne Weapons and Associated Equipment, Consumable Material Applications and Hazardous Material Authorized Use List) (NOTAL). The manual provides processes for cleaning and corrosion control and authorizes approved materials for use in these processes and all other processes that utilize consumable hazardous materials. The hazardous materials authorized in NAVAIR 01-1A-75 (NOTAL) constitute the Authorized Use List for maintenance of airborne weapons and associated equipment.

4.3.31.2 Weapons System Development/Change. During the development of new weapons systems, or changes

to existing systems, only materials in the Authorized Use List may be specified for use in maintenance. This control ensures that the least hazardous, technically acceptable, legal materials are specified and minimizes the variety of hazardous materials required in maintenance functions.

4.3.31.3 Legal Sanctions. Uniformed and non-uniformed Government employees who use, or specify the use of, hazardous materials that are not in compliance with environmental regulations can be held personally liable for criminal and civil sanctions. Using only the materials in the Authorized Use List will reduce this liability risk.

4.3.31.4 Material Deviations.

4.3.31.4.1 Temporary Deviations. There are occasions when an activity may need to use a hazardous material not authorized in the Authorized Use List due to supply or other problems. The commanding officer of a maintenance activity has the authority to grant temporary deviations from the Authorized Use List; however, he/she also assumes any risk involved. The technical manual Fleet Support Team can grant temporary deviations of up to 1 year and will assist the requesting activity in finding a suitable substitute. The deviation request can be informal via telephone, telefax, naval message or any other correspondence. The deviation request should include: material to be substituted and the substitute material to be used, if known (including complete part number; military specification or Commercial Item Description (CID) number; nomenclature; and National Stock Number (NSN)).

4.3.31.4.2 Permanent Deviations. A permanent material deviation request will cause a change to NAVAIR 01-1A-75 (NOTAL) and should be submitted per Form OPNAV 4790/66, Technical Publications Deficiency Report (TPDR). At a minimum the request for a material to be added, deleted or changed should include: complete part number, military specification or CID number and NSN; written justification for the deviation that fully addresses the applicable application in NAVAIR 01-1A-75 (NOTAL); a Material Safety Data Sheet for any new or changed material; and if the proposed new or changed material is not a material currently authorized in the Authorized Use List, a list of authorized materials considered for use with reasons and test results showing why their use was rejected.

4.3.31.4.3 Unacceptable Materials. In general, the following materials will not be approved for use: Ozone Depleting Substances (ODS) or materials containing ODS; materials not in compliance with environmental regulations; known and suspected carcinogens or materials containing them; or proprietary materials.

4.3.31.5 The following continuing actions are required to ensure compliance with environmental laws and regulations and to minimize the use of hazardous materials:

a. Review of all maintenance documentation to ensure all hazardous materials are in compliance with NAV-AIR 01-1A-75 (NOTAL).

b. Identification of authorized substitutes for ODS, carcinogens, environmentally non-compliant materials, and other materials not in compliance with NAVAIR 01-1A-75 (NOTAL).

c. Removal from technical manuals of materials and processes that are redundant to those in NAVAIR 01-1A-75 (NOTAL).

d. Review of Engineering Change Packages, Technical Directives, Technical Publications Deficiency Reports, Interim Manual Change Releases, etc., to preclude the proliferation of hazardous materials for use in maintenance processes.

e. Review and update of supply documents (Allowance Parts Lists/Allowance Equipage Lists) to correlate with the latest airborne weapons HMC&M Program data.

f. Review of NAVAIR 01-1A-75 (NOTAL) and submission of source data for updating NAVAIR 01-1A-75 (NOTAL).

4.3.32 Supply Reference Publications

4.3.32.1 The following is a listing of the general use manuals, publications, and directives which are used by aviation supply personnel to determine standard supply system management data relative to material identification, material requisitioning, and processing of repairable components.

4.3.32.2 Management List-Navy is published on microfiche and is updated and redistributed quarterly. It is tailored to Navy interest items and contains basic management data for each national stock number, such as inventory manager identification, item nomenclature, unit of issue, unit price, security classification, material condition code, and deleted or superceded national stock numbers.

4.3.32.3 Master Cross Reference List is published on microfiche and is updated and redistributed quarterly. It is tailored to Navy interest items and contains part number, Commercial and Government Entity codes (CAGE) (formerly FSCM), applicable national stock number data, and nomenclature.

4.3.32.4 Cataloging Handbook H-4 is a microfiche publication which contains the name, address, and a 5-digit

CAGE code (formerly FSCM) for each company which produces items used by the Federal government. The CAGE is used in conjunction with a part number, item number, symbol, or trade name to identify the specific manufacturer or an item.

4.3.32.5 Afloat Supply Procedures (NAVSUP Publication 485) (NOTAL) establishes policies for the operation and management of afloat supply departments and activities operating under afloat procedures. Although it is designed primarily for nonautomated ships, much of the information and policy apply to automated ship operations. The procedures contained in the manual are considered mandatory unless modified by applicable fleet and type commander directives.

4.3.32.6 Operating Procedures Manual for MILSTRIP and MILSTRAP establishes policy and procedures relative to MILSTRIP and MILSTRAP. It covers procedures relative to supply system management, requisitioning ashore, inventory control, financial matters, material movement, and serves as a ready reference for personnel involved in preparation and processing of MILSTRIP documents.

4.3.32.7 Supply Afloat Packaging Procedures (NAVSUP Publication 484) (NOTAL) provides guidance to supply activities ashore and afloat in accomplishment of basic packaging techniques which will adequately protect materials and retrograde shipments of repairable items.

4.3.32.8 Navy Stock List of Publications and Forms (NAVSUP Publication 2002) (NOTAL) contains a listing of current publications and forms used throughout the Navy which have assigned stock numbers. Items are stocked at the Naval Aviation Supply Office and can be ordered using a MILSTRIP P-2002 (NOTAL).

4.3.32.9 List of Items Requiring Special Handling (NAVSUP Publication 4105) (NOTAL) identifies items by national stock number which require special handling procedures. Categories of such items include those which are hazardous, deteriorative in nature (shelf life controlled), and security classified. P-4105 is distributed quarterly.

4.3.32.10 Individual Component Repair List (ICRL) is published by NAVAMMOLOGCEN in microfiche and provides aviation intermediate maintenance activities with the ability to relate maintenance capability to individual repairables ordered for screening. ICRL, as an overall statement of intermediate maintenance activity repair capability, is an integral extension of the maintenance program.

4.3.32.11 Consolidated Remain-in-Place List is a microfiche publication identifying those immediate depot level repairables which are authorized to remain in place. The Consolidated Remain-in-Place List consists of three parts: national item identification number sequence listing, part number to national item identification number listing, and a discrete listing for each type and model aircraft in national item identification number sequence.

4.3.32.12 Introduction to Federal Supply Catalog and Related Publications (NAVSUP Publication 4000) (NOTAL) contains descriptions of the format and contents of the List of Items Requiring Special Handling (NAVSUP Publication 4105) (NOTAL), the MRIL, Afloat Shopping Guide (NAVSUP Publication 4400) (NOTAL), and Navy item control number national stock number (cross reference).

4.3.32.13 Financial Management of Resources, Operating Forces (NAVSO P-3006/P-3013) (NOTAL) contains information related to and procedures for maintaining operating targets and define terms used in the resources management system pertaining to activities, ships, and squadrons.

4.3.32.14 Shipboard Uniform Automated Data Processing System (SUADPS) AV (207) Support Procedures (NOTAL) provides detailed procedures for the operation of SUADPS for supply, accounting, and other business oriented applications. It is mandatory for all aircraft carriers and amphibious assault ships using SUADPS. It also applies to Marine Aviation Logistics Squadrons for aviation support and P-3 mobile maintenance support system activities. It is distributed to ships and activities using SUADPS procedures and may be obtained from the NAVAMMOLOGCEN.

4.3.33 List of Navy Aviation Publications Issued by NAVAMMOLOGCEN

4.3.33.1 Consolidated Notes for Selected Microfiche Publication of the NAVAMMOLOGCEN contains descriptions of the format and contents of Section P-2300, Section P-2310, Consolidated Remain-in-Place List-01, Section P-2330, Sections C0030, NAC-10, ICRL-A, and ICRL-C.

a. Section P-2300, in microfiche format, lists repairable assemblies under the cognizance of NAVAMMOLOGCEN, NAVAIRSYSCOM, or Branch Aviation Supply Office. P-2300 is published semiannually.

b. Section P-2310, in microfiche format, serves as a master reference list for identifying and requisitioning parts of replacement-significant items required to support

repairable assemblies listed in section P-2300. P-2310 is published semiannually.

c. Section P-2320 informs field activities of approved changes in recoverability (condemnation) levels of items which call for retention vice disposal.

d. Section P-2230, in microfiche format, lists an aggregate of the interchangeability data shown in section P-2300 and section P-2310.

4.3.33.2 NAVAMMOLOGCEN Bulletin contains technical information which is helpful in the inventory management of the aviation supply segment of the Navy supply system. It is furnished to all activities engaged in aviation supply and to any other activity which advises NALC of an appropriate need-to-know. It advises concerned personnel of new information on aviation supply procedures, changes to the NALC Navy stocklist, manual field supply problems, and other supply activities and aviation storekeepers.

4.3.34 Definitions

Allowance Quantity. The inventory stocked at operational sites to support, remove, and replace maintenance actions.

Appropriation Purchase Account. An investment-funded account of material procured with funds appropriated by Congress (e.g., WPN). An investment-funded item is normally a repairable that is requisitioned by an operating activity for eventual use but will be returned to the supply system for restoration when it is no longer serviceable. Investment-funded items are issued to authorized users at no cost.

Carcass. An unserviceable repairable item.

Configuration Management. A process for establishing and maintaining consistency of a product's performance, functional and physical attributes with its requirements, design and operational information throughout its life. The Configuration Management effort includes identifying, documenting and verifying the functional and physical characteristics of an item; and controlling changes to an item and its documentation. It shall provide a complete audit trail of decision and design modifications.

Depot Level Repairable. A repairable item of supply that may be repaired at designated levels of maintenance, but can be condemned only at the depot level, or at the direction of the depot maintenance activity.

Depot Maintenance. That maintenance which is the responsibility of and performed by designated maintenance

activities to augment stocks of serviceable material and to support organizational maintenance and intermediate maintenance activities by the use of more extensive shop facilities, equipment, and personnel of higher technical skill than are available at the lower levels of maintenance. Its phases normally consist of inspection, test, repair, modification, alteration, modernization, conversion, overhaul, reclamation, or rebuild of parts, assemblies, subassemblies, components, equipment end items, and weapon systems; the manufacture of critical unavailable parts; and providing technical assistance to intermediate maintenance organizations, users, and other activities. Depot maintenance is normally accomplished in fixed shops, shipyards, and other shore-based facilities, or by depot field teams.

Designated Overhaul Point. An activity (including an activity of another service or a contractor) designated to perform the highest (depot) level of maintenance or condemnation in a particular item or group of items.

Designated Support Point. The supply entity, either a naval supply center of the supply department of a designated overhaul point, that maintains inventory and financial accountability of material inducted into repair; transaction item reports material status.

End Item. A final combination of assemblies, components, parts, and material which together perform a complete operational function (e.g., ship, aircraft, ground support equipment).

Field Level Repairable. Any item, component, or equipment which is removed and repaired at the organizational and intermediate maintenance level.

Intermediate Maintenance Activity. Any aviation activity (ship or station) tasked with providing intermediate level maintenance support. The intermediate maintenance activity consists of the aircraft intermediate maintenance department, the supply department, the weapons department, the public works department (ashore), and the engineering department (afloat).

Inventory Control Point. An organizational unit or activity within the DoD that is assigned the primary responsibility for the material management of a group of items, either for a particular service or for the DoD. Material inventory management includes cataloging directions, requirements computation, procurement direction, distribution management, disposal direction, and general rebuild direction.

Inventory Manager. An organizational unit or activity which is assigned the primary responsibility for the supply management of a group of items including responsibility for computing repair documents.

Maintenance Capability. Availability of those resources, namely facilities, tools, test equipment, drawings, technical publications, training, maintenance personnel, engineering support, and spare parts, which are required to carry out maintenance.

Maintenance Capacity. A quantitative measure of maintenance capability usually expressed as the amount of direct labor manhours that can be applied within a specific industrial shop, or other entity, during a 40-hour week (one shift).

Material. All tangible items (ships, tanks, self-propelled weapons, aircraft, etc., and related spares, repair parts and support equipment; but excluding real property, installations, and utilities) necessary to equip, operate, maintain, and support military activities without distinction as to their application to administrative or combat purposes.

Navy Stock Fund. A revolving or working capital fund which acquires, holds, and issues inventories. When an item is issued, the customer is charged for the material and the stock fund is reimbursed.

Organizational Level Maintenance. That maintenance which is normally performed by an operating unit on a day-to-day basis in support of its own operations. This work is usually accomplished by aviation ordnance or aircraft maintenance personnel assigned to aircraft squadrons.

Planned Maintenance. The systematic care and inspection of material by the user for the purpose of retaining it in serviceable condition and detecting and correcting minor failures before they develop into major defects or malfunctions.

Planned Maintenance Requirement. The number of assemblies to be replaced per given maintenance cycle.

Ready-For-Issue. An item that is functionally operational and meets performance specifications. This item may be new, repaired, or overhauled.

Repairable Item. An item of durable nature which, when unserviceable, can normally be restored by corrective maintenance.

Repair Cost. The cost incurred by a Navy (organic) or commercial activity in repairing or overhauling an item. It includes only the costs incurred by the depot level maintenance activity in direct and indirect labor, material costs, and general administrative costs.

Repair Part. An item required for the maintenance, overhaul, or repair of a system, equipment, or end item. This identification does not include support equipment but does include repair parts for support equipment.

Spares. (1) Articles identical or interchangeable within the end articles which are procured over and above the quantity needed for initial installation or support of a system. (2) Components used to complete an equipment or system (e.g., aircraft engine, radio transmitter, pump, electric motor, etc.).

Support Item. An item subordinate to or associated with end items (i.e., spares, repair parts, and support equipment).

Transaction Item Report. A separate report by item and by transaction of an action which affects stock status.

CHAPTER 4.4

Maintenance Engineering Management

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CHAPTER 4.4

Maintenance Engineering Management

4.4.1 General

4.4.1.1 Maintenance engineering is that activity of equipment maintenance which develops concepts, criteria, and technical requirements during the acquisition phase of the system or equipment life cycle. Maintenance engineering is applied and maintained during the operational phase to assure timely, adequate, and economic maintenance support of systems and equipment.

4.4.1.2 Included in maintenance engineering is the requirement for logistics support analysis and level of repair analysis. From these analyses, both hardware design and procedural support constraints are specified and subsequently monitored. During the in-service phase, maintenance engineering establishes the requirements and implements actions to assure timely, effective, and economic logistics support of the operational equipment. During the in-service engineering phase, maintenance engineering tasks are designated as elements of integrated logistics support and are performed by cognizant maintenance engineering activity assignments.

4.4.2 Cognizant Maintenance Engineering Activity Assignment

4.4.2.1 Technical Support Assignments to Naval Air Systems Command Field Activities and Space and Naval Warfare Systems Command Research and Development Centers, provides procedural requirements and related information for implementing the Naval Air Systems Command (COMNAVAIRSYSCOM) management policy regarding the utilization of COMNAVAIRSYSCOM field activities, other field activities, and relevant Space and Naval Warfare Systems Command and Research and Development Centers for technical support of COMNAVAIRSYSCOM's programs and functions. This instruction also publishes a listing of field activity and research and development center technical support responsibility assignments.

4.4.2.2 NAVAIRINST 5400.14C (NOTAL), Cognizant Field Activity Program, implements management policy regarding utilization of COMNAVAIRSYSCOM's field activities by providing the policies and procedures governing assignment of responsibility and delegation of authority to field activities for management and performance of in-service engineering functions for service equipment. A

COMNAVAIRSYSCOM notice is issued annually to publish assignments of in-service engineering cognizance for aircraft, guided weapons, aeronautical systems, and related ground support equipment. The list is a directory which reflects cognizant field activity assignments.

4.4.2.3 Transfer of the functions to field activities outside the direct jurisdiction of COMNAVAIRSYSCOM and administration of the budget requires a means of achieving tasking and funding to meet the rules associated with financial guidelines. That is accomplished by the issuance of Team Work Plans to individual field activities to manage those resources dedicated to airborne weapons logistic support with other ongoing activities. That provides the required synergistic effect for the total life cycle of the system assigned. Specific and detailed assignments within the scope of the Team Work Plan's are provided in Work Unit Assignments (WUA). Funding is then provided by the issuance of work requests (NAVCOMPT 2275).

4.4.2.4 As listed in chapter 4.6, the cognizant field activity is responsible to COMNAVAIRSYSCOM for performing maintenance engineering tasks on the designated major product areas.

4.4.3 Tasking

4.4.3.1 A Team Work Plan is the principal COMNAVAIRSYSCOM document for assigning field activity tasks. NAVAIR 3930/1 provides the format for Team Work Plans and WUAs. Team Work Plans may reference applicable work unit plans or other planning documents for the assigned work which will be considered approved by virtue of their inclusion in an Team Work Plan. If adequate technical details are not described in the referenced planning documents, Team Work Plans shall request that the field activity supply all necessary technical details to enable accomplishment of the work in accordance with COMNAVAIRSYSCOM requirements. In those instances where the effort involved covers a broad area and cannot be completely defined, the Team Work Plan will outline in general terms the technical area to be encompassed and may be further implemented by WUAs. For all work funded by categories 6.1 (Research) and 6.2 (Exploratory Development) of the research, development, test, and evaluation (RDT&E) appropriation, assignments shall be made only at the Team Work Plan level. WUAs shall not be issued for 6.1 nor 6.2 RDT&E funding. Although

domestic and related Foreign Military Sales (FMS) work may be included in the same Team Work Plan, separate WUAs will be required for FMS work.

4.4.3.2 A WUA is a detailed assignment to a field activity for performance of a specific task within the scope of a previously assigned Team Work Plan. WUAs are subordinate elements of Team Work Plans and their format is the same as an Team Work Plan. Under extraordinary circumstances involving extreme urgency, a WUA may be assigned by message. In such cases definitive funding information shall be included. A message WUA shall be followed by assignment on a standard format and by funding documents within 20 working days.

4.4.3.3 Logistics and maintenance engineering work assigned to field activities by the COMNAVAIRSYSCOM Airborne Weapons Logistics Division will be made by a single combined Team Work Plan or WUA issued to each field activity for all Operations and Maintenance, Navy (O&MN) logistics element support tasks. When more than one O&MN logistics or maintenance engineering program task is assigned to a field activity, the technical tasks, cost estimates, and required deliverables will be included as enclosures to the combined Team Work Plan or WUA. Consolidated cost estimates will be provided in the Team Work Plan or WUA in two tables: one for overall Team Work Plan or WUA costs by subhead, project unit code, and commodity, and the other for the program tasks by project unit code. Procurement and RDT&E WUAs are issued on an individual commodity basis (i.e., SPARROW, SIDEWINDER, etc.). COMNAVAIRSYSCOM Team Work Plans and WUAs are issued on a fiscal year basis for O&MN and RDT&E. Weapons Procurement, Navy (WPN) and other Procurement, Navy (OPN) are issued on a calendar year basis.

4.4.3.4 Acceptance, Planning, and Reporting. The field activity receiving the Team Work Plan or WUA must forward a letter of acceptance within 10 calendar days of receipt. The letter may be submitted via the electronic mail network. Each field activity will also submit a program plan using the guidance obtained from AIR-3.1. The program plan will provide the management plan of action for accomplishing the assigned tasking. A monthly expense report is required for each Team Work Plan or WUA and technical deliverable requirements will be specified in the Team Work Plan or WUA.

4.4.4 Cognizant Maintenance Engineering Activity Functions. The following responsibilities will be carried out by each maintenance engineering organization as designated and tasked by COMNAVAIRSYSCOM:

- a. Develop maintenance support concepts for weapons and equipment programmed for operational use by the Department of Defense.
- b. Provide support parameters, criteria, and quantitative maintenance experience data for use during the acquisition phase of weapons and equipment life cycles.
- c. Develop or participate in the contractor development of time-phased maintenance support plans for the introduction of new weapons and equipment into operating inventories of the Department of Defense. Update and administer these plans on a continuing basis to assure currency and a balanced maintenance support program.
- d. Develop and update technical criteria which prescribes the scope, depth, and frequency of maintenance and inspection to be performed on weapons and equipment.
- e. Prescribe the technical requirements for effecting engineering changes or modifications to operational weapons and equipment.
- f. Determine the technical requirements for maintenance facilities, tooling, test and support equipment necessary to support weapons and equipment consistent with the design and operational needs.
- g. Establish maintenance technical training criteria necessary to assure the required level of technical competency to maintain weapons and equipment in support of operational requirements.
- h. Define tasks to be performed at the various levels of the maintenance organizational chain to assure effective and economical support of weapons and equipment.
- i. Conduct required maintenance engineering feasibility studies incident to proposed changes to weapons and equipment in operating inventories of the Department of Defense.
- j. Provide engineering consulting services to all levels of maintenance and other operating activities.
- k. Administer and assure implementation of the configuration status accounting program for operational weapons and equipment.
- l. Establish maintenance production inspection criteria and procedures, including quality standards for maintenance of weapons and equipment.
- m. Develop and prescribe test procedures and criteria for maintenance of weapons and equipment.

n. Develop proposed changes to weapons and equipment to: (1) correct service-revealed deficiencies, (2) improve effectiveness of logistic support, or (3) produce life cycle cost savings.

o. Establish or provide financial decisions on spares and repair part replacement factors and other technical decisions during the equipment provisioning process, including the designation of material with respect to Source, Maintenance, and Recoverability code. (See NAVAIR-INST 4423.11.)

p. Conduct continuing analysis of equipment performance data to determine areas of opportunity for improvement and conditions where actual performance is not consistent with programmed performance predictions.

q. Provide guidance and control over maintenance data collection and equipment identification coding systems to assure interservice uniformity and quality of data collected.

r. Prescribe the technical criteria governing the reclamation, condition condemnation, and demilitarization of weapons and equipment.

s. Prescribe and issue technical instructions, including time compliance, for the accomplishment of modifications or changes to end items, weapons, and equipments, including their subsystems and components; maintain records on changes and modifications as a part of the configuration accounting program; on completion of modification or change kit installations, rescind the technical instruction and direct release of any remaining modification kits for reutilization purposes (i.e., breakdown for parts usage).

t. Develop and implement a maintenance Hazardous Material Control and Management Program for end items, weapons equipment, subsystems, and components to include a hazardous material "Authorized Use List"; to minimize the total number of hazardous materials used for maintenance; and to eliminate or reduce the use of ozone depleting substances and materials that are not in compliance with environmental regulations. NAVAIR 01-1A-75 (Airborne Weapons and Associated Equipment, Consumable Material Applications and Hazardous Authorized Use List) (NOTAL) will serve as the "control" document and be continually reviewed and updated to reflect the latest hazardous material reduction technology and environmental regulation changes.

u. Develop and implement a maintenance Consumable (Non-Hazardous) Material Consolidation Program for end items, weapons, equipment, subsystems and compo-

nents to reduce the quantity of consumable materials required to be procured, stocked stored and used during maintenance. NAVAIR 01-1A-75 (Airborne Weapons and Associated Equipment, Consumable Material Applications and Hazardous Material Authorized Use List) (NOTAL) will serve as the "control" document and will contain the list of consumable materials recommended for use.

4.4.5 Fleet Weapons Support Team (FWST). Engineering and technical support services. Provide on-site and on-call instruction and training in the installation, operation, maintenance, and modification of airborne weapons ashore and afloat to assure timely, adequate, and economic maintenance and operation during their employment. The responsibility for providing engineering and technical services has been delegated to the Naval Air Warfare Center Weapons Division, (NAVAIRWARCENWPNDIV.) as the cognizant field activity for airborne weapons, targets, and remotely piloted vehicles.

4.4.5.1 FWST Tasking and Requirements. The Team Work Plan or WUA assigns and implements engineering and technical services for airborne weapons and targets. The detailed requirements imposed by the tasking include the following:

a. Provide on-site and on-call instruction and training in the operation and maintenance of air launched missiles, bombs, ammunition, rockets, associated launchers, and targets to operating units, commands, and shore-based industrial activities.

b. Provide Missile Assist Teams to operating commands during scheduled training exercises to extend training potential and assess missile performance as requested by type commanders.

c. Monitor all operational and maintenance evolutions to determine the frequency and cause of handling damage as well as other operational and maintenance problems and recommend corrective actions to responsible maintenance engineering personnel. In this regard, provide active and responsive participation in the Quality Deficiency Reporting system monitored by the Airborne Weapons Corrective Action Program.

d. Provide training curriculum for naval weapons station personnel providing on-site training as required. Initiate development of personnel qualification and certification programs to assure required basic requisites for maintenance personnel across all skill requirements.

e. Participate in logistics reviews.

f. Provide technical assistance in support of missile sentencing inspections aboard returning ships to assign

condition codes and prescribe maintenance actions required.

g. Provide ordnance training for deploying LPHs and LHAs.

h. Support special teams for site surveys, FMS support, modifications, and engineering investigation.

i. Develop and maintain training material used to support curriculum required.

j. Respond to specific requirements proposed and desired by type commands in discharging assignments cited above and to specific requirements and inquiries by maintenance engineering personnel.

k. Provide personnel at all levels of airborne weapons maintenance with training in hazardous materials control and management, as well as in the use of NAVAIR 01-1A-75.

4.4.5.2 The Fleet Weapons Support Team is comprised of technical personnel designated as Navy Civilian Technical Specialists (NCTS) and Contractor Engineering Technical Services (CETS).

These specialists are located at strategic locations around the world. For specific information concerning locations and points of contacts of NCTS or CETS personnel contact "Commander Naval Air Warfare Center Weapons Division, (Code 311200E), 575 I Avenue, Suite 1, Point Mugu, CA 93042-5049".

4.4.5.3 Requesting Procedure. Fleet Weapons Support Team services can be requested by letter or message through the requestor's logistic chain of command. The contents of the engineering technical services requirements in message format should include: (a) billet assignment; (b) program to be supported; (c) Navy originator to provide support (NAVAIRWARCENWPNDIV, for weapons, targets, unmanned air vehicles, and remotely piloted vehicles; (d) duration of task in man-months; (e) data equipment introduced if requesting contractor assistance; (f) date equipment introduced into squadron (mo/day/yr); (g) designation of type of services requested (contractor or navy technical specialist); (h) date when assistance desired; (i) requesting activity and location; (j) equipment to be serviced; (k) short narrative justification; and (l) miscellaneous items not covered above.

4.4.5.4 Command Relationship. Navy Civilian Technical Specialists and Contractor Engineering Technical Services are full-time members of the Navy team. The commands in which they are assigned will accept them as an integral part of that organization with status similar to members of the command. NAVAIRWARCENWPNDIV, will maintain close liaison with commands to ensure that proper support is provided.

CHAPTER 4.5

Maintenance Management

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CHAPTER 4.5

Maintenance Management

4.5.1 General. Maintenance management is the process of planning, organizing, staffing, directing, and controlling organic industrial resources engaged in the physical performance of equipment maintenance. Resources consist of personnel, material, tools and equipment, facilities, technical data, and dollars provided to carry out the airborne weapons maintenance mission. Management functions include maintenance planning, program coordinating, budgeting, and progress reporting which have been developed to meet the Chief of Naval Operations (CNO) asset readiness objectives. The progress evaluation of the maintenance program is measured against ability to achieve CNO's asset readiness objectives.

4.5.2 Responsibilities

4.5.2.1 Office of Chief of Naval Operations (OPNAV) is responsible for the Naval Aviation Maintenance Program. The responsibilities for planning and programming resources for aviation weapons are delegated to the Plans, Policy, and Fleet Maintenance Support Branch. OPNAV is responsible for budgeting and allocating funds necessary for rework and maintenance of airborne weapons. The resource requirements are submitted to CNO from the COMNAVAIRSYSCOM. The requirements are formalized in the CNO's Department of the Navy Budget Submission. OPNAV plans and programs the budgeted resources to meet readiness objectives.

4.5.2.2 The Assistant Commander for Logistics/Fleet Support, through the Airborne Weapons Logistics Division, is responsible for management and allocation of funding for airborne weapons maintenance programs. COMNAVAIRSYSCOM budgetary responsibilities include the preparation of project directives to those activities performing or managing airborne weapons maintenance. COMNAVAIRSYSCOM is also responsible for gathering maintenance requirements for submission to OPNAV and for evaluating program progress through readiness reporting and funds expenditure.

4.5.2.3 As the maintenance engineering activity for air launched missiles, the Naval Air Warfare Center Weapons Division, (NAVAIRWARCENWPNDIV), is responsible for workload planning, scheduling, funding, monitoring, technical support, and coordination of missile maintenance. NAVAIRWARCENWPNDIV, Point Mugu's responsibilities are implemented within its own command structure and through the employment of detachments of

on-site representatives at Weapons Stations Yorktown, Seal Beach, and the Naval Airborne Weapons Maintenance Unit One (NAWMU-1), Guam.

4.5.2.4 The Naval Surface Warfare Center Division, Crane, IN, is responsible for workload planning, scheduling, funding, monitoring, technical support, and coordinating conventional ammunition maintenance. The Naval Surface Warfare Center Division's responsibilities are implemented within its own command structure and through the employment of NAVAIRWARCENWPNDIV, on-site detachments at Naval Weapons Stations Yorktown, Seal Beach and the NAWMU-1 Guam.

4.5.2.5 The Naval Surface Warfare Center Division, Indian Head, MD, is responsible for planning, scheduling, funding, and monitoring the workload for special weapons. This responsibility is implemented through its own command structure and employment of its detachment at McAlister, OK.

4.5.2.6 The U.S. Army Munitions and Chemical Command (AMCCOM), located at Rock Island, IL, is assigned as the single manager for certain items for conventional ammunition. AMCCOM manages, operates, and maintains the inland storage depots and industrial facilities for conventional ordnance and ammunition with the exception of cartridge actuated devices and aircrew escape propulsion system devices. In coordination with COMNAVAIRSYSCOM, AMCCOM maintains the quality assurance program for these items. AMCCOM manages the wholesale inventory of these items stored at the Army Ammunition Plants and activities.

4.5.2.7 The Naval Ammunition Logistics Center (NAVAMMOLOGCEN) Mechanicsburg PA provides inventory management of the Navy-owned retail ordnance and ammunition inventory as well as propellant actuated devices and cartridge actuated devices.

4.5.3 Maintenance Requirements

4.5.3.1 Forecast information pertaining to airborne weapon fleet requirements is obtained by COMNAVAIRSYSCOM from CNO. The budget for rework is formalized in the CNO's Department of the Navy Budget Submission (Exhibit 5). COMNAVAIRSYSCOM's Airborne Weapons Workload Schedule (AWWS) uses these requirements and combines them with asset information

from the Naval Supply Systems Command's Conventional Ammunition Integrated Management System. The AWWS currently provides an 8-calendar-quarter intermediate and depot level workload forecast. The AWWS is further refined and updated during the semiannual COMNAVAIRSYSCOM maintenance management workload conferences. Interim adjustments are made at the industrial facilities through weekly monitoring of changing fleet requirements, inventory shortfalls, and production results. Monthly status reports are generated through the services of NAVAIRWARCENWPNDIV, detachments. Once reviewed and approved, the AWWS becomes the COMNAVAIRSYSCOM workload forecast, which is published for COMNAVAIRSYSCOM, the Naval Sea Systems Command (COMNAVSEASYSYSCOM), the naval weapons support facilities, and the Naval Ordnance Station, Indian Head for planning purposes. Together with the appropriate maintenance standards contained in the COMNAVAIRSYSCOM and NAVSEASYSYSCOM Industrial Processing Guide, the AWWS is utilized by the AIR-3.2 inventory and supply managers for air launched missiles and components and the Naval Ammunition Logistics Center (NA-

VAMMOLOGCEN) for ammunition items and repair parts to plan for the time-phased capacities at the naval weapons stations and the Naval Ordnance Station to perform the scheduled maintenance and assembly workload. Similar planning processes occur on an individual basis for each naval aviation depot and contractor depot.

4.5.3.2 After maintenance facilities complete their internal workload planning and subsequently begin production, COMNAVAIRSYSCOM managers monitor the progress of work performed at the various maintenance facilities using the services of on-site detachments and resident representatives.

4.5.4 Naval Weapons Station Production Facility Status Report. If a naval weapons station air-to-air or air-to-surface production facility becomes nonoperational due to unscheduled maintenance and it cannot reasonably be expected to return to operational status within 24 hours, the naval weapons station shall submit a production facility status report to COMNAVAIRSYSCOM and COMNAVSEASYSYSCOM.

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CHAPTER 4.6

Deficiency Reporting

4.6.1 General. This chapter provides a method for reporting malfunctions, defects or procedural errors involving live or inert weapons, safety situations, technical publication deficiencies, and quality deficiencies that require special attention and prompt corrective action. It also provides a means of requesting engineering investigations.

4.6.2 Naval Aviation Maintenance Discrepancy Reporting Program (NAMDRP). The Naval Aviation Maintenance Discrepancy Reporting Program (NAMDRP) was established in accordance with the requirements of OPNAVINST 4790.2H, which specifies that a deficiency reporting program be initiated which ensures that corrective action occurs as a result of the reporting process. The program serves as the method by which hazardous deficiencies in material and publications, substandard workmanship, and improper quality assurance procedures are reported.

4.6.3 Product Discrepancy Reporting and Evaluation Program (PDREP). As part of the NAMDRP, Product Discrepancy Reporting and Evaluation Program (PDREP) initiates action to appraise, correct, and prevent product deficiencies; decreases material ownership costs; evaluates contractor or supplier performance; and uses performance data for making procurement decisions. PDREP data is fed back to those activities responsible for design, development, purchasing, production, supply, maintenance, contract administration, and other acquisition functions.

4.6.3.1 PDREP applies to the reporting of product deficiencies in new or newly reworked material used in all programs involving naval material. It includes deficiencies which may occur in items covered by warranty, government owned products under development, government lot acceptance tests, rework assessment tests, products presented to the government for test acceptance or test evaluation at destination, items supplied as government furnished equipment, or deficiencies in any other products not specifically excluded, such as medical and subsistence materials.

4.6.3.2 PDREP encompasses weapons platforms and support systems software, including reprocurments. PDREP covers all the phases of acquisition, including development, production, spare parts and equipment rework.

4.6.4 Contractor Evaluation System (CES). Another part of the NAMDRP is the Contractor Evaluation System (CES) which is a unified method for use by all systems com-

mands. The CES tracks and maintains all contractor quality history data that is collected and maintained as a result of submission of the standard form (Standard Form 368) or from inputs provided to the Quality Deficiency Evaluation and Analysis System (QDEAS) by the Fleet Support Team (FST).

4.6.5 Quality Deficiency Evaluation and Analysis System (QDEAS). The QDEAS is a computer data base program operated by the Naval Air Systems Command (COMNAV-AIRSYSCOM). The data base is located at Johns Hopkins Applied Physics Laboratory in Laurel, MD. QDEAS stores data on new or newly reworked material from Product Quality Deficiency Reports (PQDRs) (Category I and II) forwarded from the FST as they are received from the activities that initiated the PQDRs. As the status of the PQDRs change, the FST must keep the QDEAS program apprised of the current status to ensure that accurate data is provided to the PDREP and CES programs. These updates assure complete and accurate data concerning vendor performance.

4.6.6 Vendor Data Analysis Report (VDAR). The Vendor Data Analysis Report (VDAR) is an output product of the NAMDRP and serves as the method of pulling together all the data collected through QDEAS, PDREP, CES programs and other quality performance data. VDARs are used to evaluate a contractor's historical quality performance during pre-award processes. This avoids awards to contractors with a history of poor performance and will determine action necessary in the post-award process to assure product quality. During their semiannual meeting, the Systems Commands evaluate this data. The resulting decisions of the VDAR panel are then forwarded to naval shore activities for utilization by the quality assurance officer and the procurement contracting officer during the contract review and award cycles. Naval shore activities implement the actions as a result of the VDAR 26 recommendations to ensure that quality materials are delivered to the fleet.

4.6.7 Airborne Weapons Corrective Action Program (AWCAP)

4.6.7.1 The Airborne Weapons Corrective Action Program (AWCAP) resides in a computer data base called DRLOG "Deficiency Reporting Log" located at the Naval Air Warfare Center Weapons Division for defining and tracking airborne weapon deficiencies. The AWCAP is an effective, closed loop system within the weapons community that provides visibility on the status of problems and deficiencies and feed-

back on corrective actions as they occur to ensure operational readiness and to reduce maintenance costs. Sources of data that trigger an AWCAP deficiency report includes Conventional Ordnance Deficiency Reports (CODR), Explosive Mishap Reports (EMR), Engineering Investigation Requests (EIR), PQDRs (Categories I and II), and Technical Publication Deficiency Reports (TPDR) (Categories I and II). PQDR's, EIR's, and TPDR's will be submitted to the applicable FST and processed in accordance with this instruction. See figures 4-6-1, 4-6-2, 4-6-3 and 4-6-4. The CODR and or EMR deficiency reports will be submitted to the applicable FST and processed in accordance with OPNAVINST 5102.1C.

NOTE

JDAM unique information will be forwarded to the Joint Program Office at ACC/YUP, 102 West D Avenue, Eglin AFB, FL 32542-6807 Attn: APML.

4.6.7.2 Data from reported problems is tracked for the following systems:

AMRAAM	SIDEARM
HARM	SIDEWINDER
HARPOON/SLAM/SLAM-ER	SPARROW III
HELLFIRE	TALD/ITALD
JSOW	TOMAHAWK
MAVERICK	TOW
PENGUIN	WALLEYE
PHOENIX	

Rockets

Targets

Propellant Actuated Devices (PADs)

Aircraft Missile Launchers and Bomb Racks

Cartridge Actuated Devices (CADs)

Guns and Ammunition

Guided Bomb Units & JDAM

General Purpose Bombs

4.6.8 Discrepancy Reporting Programs

4.6.8.1 The Product Quality Deficiency Report PQDR provides a method for reporting deficiencies in new or newly reworked Government owned material which is under warranty. The PQDR program is an integral part of the Product Deficiency Reporting and Evaluation Program (PDREP) and provides a close-loop system for initial reporting, cause, corrective and preventive action, and status accounting of individual product quality deficiencies as well as to identify problems, trends, and recurring deficiencies. When the root cause, corrective and preventive actions taken by the contractor have been deemed acceptable by the Government Repre-

sentative at the Support Point and the Action Point, all pertinent data is forwarded to the originator, creating the closed-loop.

4.6.8.2 The Conventional Ordnance Deficiency Report (CODR). A malfunction, observed defect, induced defect, or improper storage involving conventional ordnance, explosives, ammunition, explosive systems, or devices, including weapon systems components that come in direct contact with the ordnance (e.g. ammunition, explosives, missiles) and armament/handling/support equipment used to fire, handle, load, deliver, store or transport ordnance.

4.6.8.3 The Explosive Mishap Report (EMR). An accident or incident involving conventional ordnance, ammunition, explosives, explosive systems and devices resulting in an unintentional detonation, firing, deflagration, burning, launching of ordnance material (including all ordnance impacting off range), leaking or spilled propellant fuels and oxidizers (less OTTO fuel II), or chemical agent release. Even if an ordnance system works as designed, and human error contributed to an incident or accident, the event shall also be reported as an Explosives Mishap.

NOTE

CODR and or EMR deficiency reports will be submitted to the applicable FST and processed in accordance with OPNAVINST 5102.1C.

4.6.8.4 The EIR applies to all aircraft and weapon systems, their subsystems, equipment, components, related support equipment, special tools, fluids or materials, and test program tests used in the operation of the equipment.

4.6.8.5 The TPDR provides a simplified procedure for reporting technical publication deficiencies.

4.6.9 Reporting Responsibilities

4.6.9.1 Organizational and Intermediate Level Maintenance. The weapons or ordnance officer is responsible for the administration of PQDRs, CODRs, EMRs, EIRs, and TPDRs as they relate to airborne weapons. In the absence of a weapons/ordnance officer the cognizance division officer is responsible.

4.6.9.2 Depot Level Maintenance. Quality assurance is responsible for the administration of PQDRs, CODRs, EMRs, and TPDRs.

4.6.9.3 Customers of new or newly reworked material. Quality Assurance personnel are responsible for originating a PQDR on discovery of any discrepancy. The discrepancy will be reported to the Originating Point of Standard Form (SF 368) and forwarded to the appropriate Screening Point.

4.6.10 Fleet Support Team (FST) Responsibility. The FST is responsible for the management and processing of Deficiency Reports (DRs) for cognizant weapons systems and armament systems received from the originating point. Figure 4-6-1 identifies the respective FSTs.

4.6.11 Screening Point. The FST screening point will perform the following actions:

- a. Review all deficiency reports for accuracy and completeness.
- b. Determine the appropriate action point and ensure that the report is transmitted to all cognizant activities.
- c. Forward the deficiency report to the appropriate reviewing officers within the FST for action.
- d. Forward a copy of the deficiency that qualifies as CAT I and CAT II PQDR to the QDEAS data base.
- e. Initiate follow-up action as soon as the action becomes overdue.

4.6.12 Action Point. The FST, or cognizant action point, is required to respond to all deficiencies. When a reply has not been received the originating activity will initiate follow-up action to the FST or screening point by message or other appropriate means.

4.6.13 Reports

4.6.13.1 NAVAIRWARCENWPNDIV, publishes biannual AWCAP reports which are selectively distributed throughout the airborne weapons community. These reports contain the status of problems, actions taken, and all other pertinent data relative to the reported problem. Those activities having an interest in a particular problem can be apprised of all current and historical actions on all types of deficiency reports contained in AWCAP upon request to NAVAIRWARCENWPNDIV.

4.6.13.2 NAVAIRWARCENWPNDIV screening point publishes a quarterly report on all target programs which is distributed throughout the targets community. The report contains the status of problems, cause and corrective actions taken, and all other pertinent data relative to the reported problem.

4.6.13.3 Report Numbering. A report control number will be obtained from Quality Assurance (QA) and assigned to each airborne weapon deficiency report. Report control numbers will be assigned sequentially throughout the calendar year without regard for the type of report. For example, "0001" may be the first report and is a CODR; "0002" may be

the second report and is a Category I PQDR; "0003" may be the third report and is a TPDR; and "0004" may be the fourth report and is a CODR. The report control number is composed of the following elements:

- a. Element (1) is the service designator code of the originating activity, for example "V." Refer to NAVSUP P-485 for service designator codes.
- b. Elements (2) through (6) are the Unit Identification Code (UIC) of the originating activity. For example, "54056," followed by a dash (-).
- c. Elements (7) and (8) are a two character identification of the calendar year, for example, "87" followed by a dash (-).
- d. Elements (9) through (12) are the locally assigned control number. These numbers are sequential beginning with 0001 each calendar year.

4.6.14 PQDR Program. The Product Quality Deficiency Report (PQDR) program provides activities with a method for reporting deficiencies in new or newly reworked material which may be attributable to non-conformance of contractual or specification requirements or substandard workmanship. Failure must have occurred at zero operating time, during initial installation, operation, test, check, turn up, or first flight. Items under warranty are considered new material for PQDR purposes. Discrepancies discovered after the initial use do not qualify for PQDR reporting and shall be reported as Conventional Ordnance Deficiency/Engineering Investigation Request (CODR/EIR), as appropriate. The PQDR program differs from the EI in that it reports possible deficiencies in the manufacturing or rework process. The goal of this program is to improve the quality of work performed by naval aviation depots, contractors, and subcontractors providing new or reworked material.

4.6.14.1 Types of PQDRs. There are two categories of PQDRs:

- a. Category I. A quality deficiency which may cause death, injury, or severe occupational illness, cause loss or major damage to a weapon system, directly restricts the combat readiness of the using organization, or which results in a production line stoppage is classified as a Category I PQDR.
- b. Category II. All quality deficiencies which are assessed to have significant and widespread material or human resource impact and do not affect safety of personnel, impair the combat efficiency of an individual or organization, or jeopardize mission accomplishment is classified as a Category II PQDR.

EQUIPMENT	FST/NAVAVNDEPOT	
Aerial Refueling/Ext. Fuel Stores/Baggage Containers	NAVAVNDEPOT	JACKSONVILLE FL.
Aircraft Batteries/Pyrotechnics/Signal Cartridges/Parachute Flares/Infrared Decoy Flares & Devices/7.62 MM Ammunition/.50 CAL Ammunition/MLM	NAVSURFWARCENDIV	CRANE IN
Aviation Personal Protective/Survival Equipment/Oxygen Systems/LOX Converters/Oxygen Regulators/Oxygen Cylinders	NAVAIRWARCENACDIV	WARMINSTER PA
Aviation Training Devices	NAVTRASYSSEN	ORLANDO FL
Bomb Racks/Sonobouys/WALLEYE/Chaff/Aircraft Missile Launchers/TARPS/LAU-138A/A Guided Missile Launcher Set & D-46/ALE-39 BOL Chaff Dispenser	RAYTHEON TRAINING & SERVICES	INDIANAPOLIS IN
CSE/Aeronautical Expeditionary Airfield Equipment/Visual Landing Aids/Arresting Gear and Catapults/Tool Boxes	NAVAIRWARCENACDIV	PATUXENT RIVER MD (LAKEHURST NJ SITE)
Explosive Cartridges/CADS/AEPS/Rockets/Rocket Launchers/JATO/RATO/PODS/Airborne Expendable Countermeasures	NAVSURFWARCENDIV	INDIAN HEAD MD
Hand Tools	FLEMATSUPPO	MECHANICSBURG PA
Missiles (Except WALLEYE Missile) WSE/TARGETS/Aircraft Guns/Ammunition/Bombs/Airborne Ordnance/Parachute Flare Dispensers/ALE-33/44 Dispenser Sets	NAVAIRWARCENWPNDIV	POINT MUGU CA
JDAM/JSOW/TALD/ITALD	NAVAIRWARCENWPNDIV	CHINA LAKE CA
Air Launched Missile Containers	WPNSTA	EARLE COLTS NECK NJ
Photographic/Meteorological Equipment	COMNAVAIRSYSCOM	PATUXENT RIVER MD
Technical Publications	NAVAIRTECHDATAENGSEVCOM	SAN DIEGO CA
ALE-29A/37A/41/47 Dispenser Sets/ALE-39 Dispensing System	NAVAVNDEPOT	JACKSONVILLE FL
Special Weapons	NAVSURFWARCENDIV	INDIAN HEAD, DET MCALESTER OK
Torpedos	NAVUNSEAWARCENDIV	KEYPORT WA
PENGUIN	PEOCMPANDUAV/PMA258R	PATUXENT RIVER MD
PIONEER UAV/RF Passive Countermeasures (Chaff)/RF Active Countermeasures (GEN-X & POET)	NAVAIRWARCENACDIV	PATUXENT RIVER MD

Figure 4-6-1. Fleet Support Teams (FST)

ORIGINATOR	ORIGINATING POINT	SCREENING POINT	ACTION POINT	SUPPORT POINT
1. Discover defects. 2. Initiate PQDR. 3. Forward report to originating point. a. Cat I - 24 hrs. b. Cat II - 3 days.	1. Submit PQDR to screening point. a. Cat I - 24 hrs. b. Cat II - 3 days. 2. Certifies validity, completeness, and accuracy of report. 3. Returns invalid reports. 4. Assigns RCN. 5. Finalizes report. 6. Provides copy of report to installation supply support activity for stock ID and provide holding instructions in case of exhibit investigation. 7. Receives screening point replies and provide same to originating point.	1. Screens PQDR for validity, accuracy, and completeness. 2. Forwards PQDR to action point. a. Cat I - 24 hrs. b. Cat II - 10 days. 3. Receives replies from action point - forward same to originating point. a. Cat I - 3 days. b. Cat II - 3 days.	1. Acknowledge receipt. a. Cat I - 24 hrs. b. Cat II - 10 days. 2. Determine if warranty applies take appropriate action. 3. Determine if credit applies take appropriate action. 4. Alert field/storage of suspect material(s). 5. Suspend/screen stock. a. Cat I - 24 hrs. b. Cat II - 20 days. 6. Determine cause (contractor/Government) and responsible support point. 7. When action point conducts independent investigation, provide interim or final reply. after receipt of requested exhibit. a. Cat I - 20 days w/o exhibit or 20 days after receipt of requested exhibit. b. Cat II - 30 days w/o exhibit or 30 days after receipt of requested exhibit. 8. Forward PQDR to support point. a. Cat I - 24 hrs. b. Cat II - 10 days. 9. Forward replies from support point. a. Cat I - 3 days. b. Cat II - 10 days.	1. Acknowledge receipt. 2. Conduct investigation. 3. Provide final/interim responses: after receipt of requested exhibit. a. Cat I - 20 days w/o exhibit or 20 days after receipt of requested exhibit. b. Cat II - 30 days w/o exhibit or 30 days after receipt of requested exhibit. 4. Prepare DLA Form 1227 and forward same to action point.
Notes: a. All times are calendar days/hours. b. All times begin with receipt of report. c. If exhibit is required for investigation, request exhibit from originator or holding activity within 7 days of receipt of report. d. If the exhibit is a non-recoverable item. i. e., AQM-37 Target, the PQDR will be originated within the 3-day time frame period: however, the investigation will not begin until all the data has been collected and shipped to the support point. They will formally open the PQDR and begin the investigation. The data package will be clearly marked "to be opened in the presence of a government representative" and shall also be marked PQDR exhibit/report control number. Fill in the number.				

Figure 4-6-2. Processing of Product Quality Deficiency Reports

TYPE OF REPORT	ORIGINATING POINT	SCREENING POINT	ACTION POINT
CODR	<ol style="list-style-type: none"> 1. Discover defect. 2. Initiate CODR. 3. Forward report to screening point. <ol style="list-style-type: none"> a. Critical - 24 hours. b. Routine - 3 days. 	<ol style="list-style-type: none"> 1. Screen CODR for validity, accuracy, and completeness. 2. Forward CODR to action point. <ol style="list-style-type: none"> a. Critical - 24 hours. b. Routine - 5 days. 	<ol style="list-style-type: none"> 1. Provide final/supplemental report to originating point. <ol style="list-style-type: none"> a. Critical - 24 hours. b. Routine - 5 days.
EMR	<ol style="list-style-type: none"> 1. Initiate EMR after mishap. 2. Forward report to screening point. <ol style="list-style-type: none"> a. Critical - 24 hours. b. Routine - 48 hours. 	<ol style="list-style-type: none"> 1. Screen EMR for validity, accuracy, and completeness. 2. Forward EMR to action point. <ol style="list-style-type: none"> a. Critical - 24 hours. b. Routine - 72 hours. 	<ol style="list-style-type: none"> 1. Provide final/supplemental report to originating point. <ol style="list-style-type: none"> a. Critical - 24 hours. b. Routine - 72 hours.
EIR	<ol style="list-style-type: none"> 1. Discover defect. 2. Initiate EIR. 3. Forward report to screening point. <ol style="list-style-type: none"> a. Critical - 24 hours. b. Routine - 3 days. 	<ol style="list-style-type: none"> 1. Screen EIR for validity, accuracy, and completeness. 2. Forward EIR to action point. <ol style="list-style-type: none"> a. Critical - 24 hours. b. Routine - 5 days. 	<ol style="list-style-type: none"> 1. Provide final/supplemental report to originating point. <ol style="list-style-type: none"> a. Critical - 24 hours. b. Routine - 5 days. 2. Alert field/storage of suspect material. 3. Suspend/screen stock. <ol style="list-style-type: none"> a. Critical - 24 hours. b. Routine - 5 days. 4. When action point conducts independent investigation, provide interim, or final reply after receipt of requested exhibit. <ol style="list-style-type: none"> a. Critical - 20 days w/o exhibit or 20 days after receipt of requested exhibit b. Routine - 30 days w/o exhibit or 30 days after receipt of requested exhibit
<p>Notes</p> <ol style="list-style-type: none"> a. All times are calendar days/hours. b. All times begin with receipt of report. c. All CODR's and EMR's will be processed in accordance with OPNAVINST 5102.1C d. If exhibit is required for investigation, request exhibit from originator or holding activity within 7 days of receipt of report. e. Submission of an OPREP-3 Report or OPNAVINST 3750.6R-generated report does not relieve the reporting command from the requirement for submitting an Explosive Mishap Report or Conventional Ordnance Deficiency Report 			

Figure 4-6-3. Processing of CODR's, EMR's, and EIR's

TYPE OF REPORT	ORIGINATING POINT	SCREENING POINT	ACTION POINT
CAT I TPDR	<ol style="list-style-type: none"> 1. Discover defect. 2. Initiate TPDR. 3. Forward report to screening point. When urgency dictates, send by most expeditious means; telephone, local visit, oral communication will be confirmed by message. 	<ol style="list-style-type: none"> 1. Acknowledge receipt of TPDR 2. Forward report to action point. 	<ol style="list-style-type: none"> 1. Provide final/supplemental report to originating point.
CAT II TPDR	<ol style="list-style-type: none"> 1. Discover defect. 2. Initiate TPDR. 	<ol style="list-style-type: none"> 1. Acknowledge receipt of TPDR 2. Forward report to action point. 	<ol style="list-style-type: none"> 1. Provide final/supplemental report to originating point.

Figure 4-6-4. Processing of Technical Publication Deficiency Reports (TPDR's)

4.6.14.2 Category I PQDRs shall be submitted to the FST as follows:

- a. A Category I PQDR shall be sent by routine message.
- b. When urgency dictates, PQDRs may be reported by the most expeditious means available, for example, telephone or local visit. Oral communication will be confirmed by message.

4.6.14.3 Category II PQDRs will be submitted to the FST on an Standard Form 368 as follows:

- a. Submit a Standard Form 368 after discovery of the deficiency. In no case will a Category II PQDR be submitted by naval message. Instructions for preparation of a Standard Form 368 are contained in paragraph 4.6.16. In case of a non-recoverable exhibit, a PQDR may be originated with data to follow. The 3 working days may be waived until all data is collected and is forwarded to the screening point.
- b. Forward PQDRs to the FST for action in coordination with all concerned activities.
- c. Send copies of all supporting documents, such as DD 1348-1, DD 1155, DD 1371, DD 1571, photographs, test reports, and other pertinent data to facilitate processing. Include the report control number on all documents. See paragraph 4.6.13.2 for report control numbering procedures.
- d. Category II PQDRs on deficiencies in common or general type material (e.g., tools, lubricants, or corrosion preventive material) received defective from supply, but not installed or peculiar to a specific ordnance component (i.e., 7E, 1H, and 9 cognizance material) will be submitted on a Standard Form 368 to the Fleet Material Support Office (Code 9142) in addition to the FST.
- e. The supporting supply department will hold the defective material until disposition instructions are received from the FST or directing authority.

NOTE

Any material to be released to an authorized contractor's representative or shipped directly to a contractor's plant shall be processed through the supporting supply department. Supply may issue the material on a custody basis only after receiving authority to do so from the FST.

4.6.14.4 PQDR material shall be handled and prepared as follows:

- a. Maintain material in an "as is" condition. Whenever a hazardous condition is evident, request shipping instructions from the FST.

- b. Take special care to cap or package material immediately upon removal from the system in such a manner as to prevent corrosion, contamination, or other damage that may contribute to confusion or loss of possible cause factors.

NOTE

Do not attempt any adjustments, disassembly, or perform any cleaning externally or otherwise. In the event target engines or components have been immersed in sea water, removal of rust or corrosion damage to the items during PQDR processing, stowing and shipping is permissible. If any adjustment, disassembly, or cleaning was performed during a local investigation, a list of particulars describing the local investigation must accompany the material to the FST.

- c. Forward samples of fluid in clean, sealed, authorized containers. If contamination is suspected, annotate sample bottles accordingly. Do not attempt to reassemble fragments of failed material. Wrap each fragment separately to prevent damage caused by relative movement. When feasible, forward associated accessories, components, or material suspected of contributing to the malfunction or mishap. Do not touch failed surfaces since this could mask failure data.
- d. Attach the PQDR to the ordnance component or assembly. Ensure the exhibit is marked with the PQDR exhibit control number.
- e. In case where the exhibit was expended, attach the PQDR exhibit control number to the data package.
- f. In order to formally close a PQDR written on an expended target, the cause and corrective action data will be reviewed by a committee of engineers appointed or delegated by the individual Target Programs. The closing action will then be forwarded to the originator.

4.6.14.5 Support Point. The support point performs the following functions:

- a. Assists, when requested by the action point, under the established time frames specified in this instruction.
- b. Furnishes a report of findings as requested by the action point.
- c. Provides an information copy of PQDRs and subsequent correspondence to COMNAVAIRSYSCOM, and the Naval Aviation Depot Operational Center (NADOC) for organic and commercially reworked material and related components.
- d. Receives deficiency reports from across component lines (source of supply action point) for appropriate action.

e. Returns or provides for the return of the equipment or material to the Navy supply system under the Master Repairable Item List after completing the investigation unless otherwise directed or unless the material or equipment is beyond salvage. The equipment or material may be inducted for rework if the item is extensively disassembled and salvageable. In the case of mishap investigations, the senior members of the mishap board or the assigned Naval Safety Center investigator has proprietary interest in equipment or material being investigated. No disposition shall be made until released under OPNAVINST 3750.6R (NOTAL).

4.6.15 Category I PQDR Message Preparation. The following instructions and examples apply to Category I PQDR message reports. Examples of PQDR message entries are defined in bold type; for an example of a completed PQDR message format, refer to figure 4-6-4.

NOTE

Use of "MINIMIZE CONSIDERED" and shall be in accordance with NTP-3 (NOTAL).

a. Precedence: ROUTINE.

b. From/To Blocks. Complete these blocks as indicated below.

FM Message Originator
TO FST//Code//
AAC EGLIN AFB FL//YAL/268L//
(If Mishap Involves AIM-120 Missiles)
AIG FOUR TWO THREE//
AIG ZERO SEVEN SIX TWO TWO//
AIG ONE ONE TWO//
AIG SEVEN SIX TWO ZERO// (See below)
AIG FOUR ZERO TWO// (See below)

NOTE

For appropriate AIG see OPNAVINST 5102.1C.

When a mishap involves an explosive system launch device or armament weapons support equipment, include AIG 7620 in the "To" line.

When an explosive mishap involves a torpedo, mine, depth charge, or pyrotechnic device, include AIG 402 in the "To" line.

c. Information Addressee Block. Include the appropriate information addressees.

(1) Include the cognizant inventory control point when reporting defective new material.

(2) Include the cognizant functional wing(s).

(3) Include the cognizant commander(s), Marine Aviation Logistics Squadron(s).

(4) When flight safety considerations involve aircraft or equipment common to the Air Force, Army, or Coast Guard, address an information copy to the appropriate command:

Air Force: **AFISC Norton AFB CA**
AFCL Wright Patterson AFB OH
//QE//

Army: **CDRAVSCOM STL MO**
//AMSAVQIAG//
CDRUSASC FT RUCKER AL
//PESCD//

Coast Guard: **COMDT COGARD Washington DC**

(5) When flight safety conditions concern H-1, 3, 46E/F, or 53D/E aircraft, information copies are addressed to Marine Helicopter Squadron ONE (HMX-1).

(6) Include the COMNAVAIRWARCENWPN-DIV CODE-331000D, only when the PQDR pertains to weapons loading procedures in COMNAVAIRSYSCOM airborne weapons and stores loading manuals and checklists.

(7) Include the supporting station or ship intermediate maintenance activity.

(8) Refer to OPNAVINST 5102.1C for additional information.

d. Message Security Classification Block. Security classifications are defined in the Department of the Navy Security Classification Guidance (OPNAVINST 5513.1E) (NOTAL); however, every attempt should be made to employ UNCLAS to expedite routing.

e. Subject Block. List the applicable subject.

SUBJ CAT I PQDR

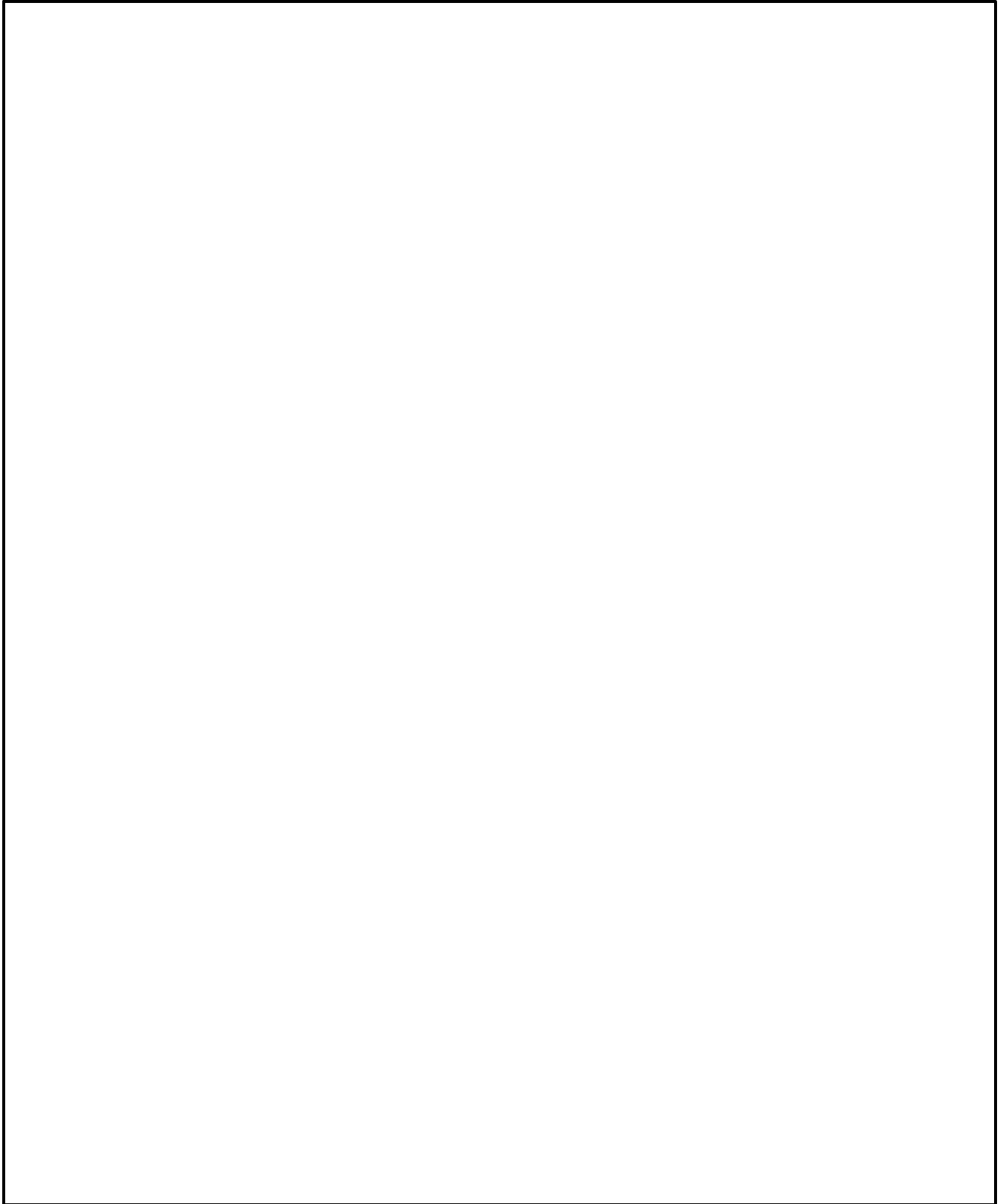


Figure 4-6-5 Sample Category I Product Quality Deficiency Report Message

- H. (IF COMBINED WITH EMR, SEE PAGE 4-6-12 PARAGRAPH (22H) AND LIST THE APPLICABLE DATA)
- I. AOCM WORD DEPLOYED//

DECL/OADR// (IF MESSAGE IS CLASSIFIED)

BT

Figure 4-6-5. Sample Category I Product Quality Deficiency Report Message (Cont'd)

NOTE

Message may be combined with a CODR or EMR.

f. Reference Block. List the applicable references using an alpha designator starting with "A."

REF/A/DOC/OPNAVINST 8000.16A/1JUNE01//

NOTE

Include only the instructions or references applicable to the occurrence. When a technical manual is referenced, include the issue date and latest change data.

g. The entries items 1 through 20 describe technical entries which are required to properly document the deficiency. Each is prefaced by an assigned line number as shown on the following pages:

(1) On line 1, enter the reporting custodian:

1. VF-213

(2) On line 2, enter the FST for the failed item:

2. NAVAIRWARCENWPNDIV

(3) On line 3, enter the report control number as shown below. See paragraph 4.6.13.2 for additional information on the report control number:

3. V09934-88-0007

(4) On line 4, enter the Julian date the deficiency was discovered and the location of the reporting unit as shown below. Omit the location if the entry will cause the message to become classified:

4. 8035-DEPLOYED

NOTE

Items 5 through 9 must not be omitted.

(5) On line 5, enter the Naval Ammunition Logistics Code/Department of Defense Identification Code (NALC/DODIC) and National Stock Number (NSN) of the failed material:

5. PV66/1410-00-140-7813

(6) On line 6, enter the nomenclature of the item:

6. AIM-9M

(7) On line 7, indicate the manufacturer's name and unit identification code and the shipper's name. For reworked material, enter the last rework activity if known:

7. RAYTHEON/94893

(8) On line 8, enter the manufacturer's part number as shown below:

8. 639AS4992

(9) On line 9, enter the serial and lot/batch number and indicate the number used:

9. NDT-00362 SERIAL

(10) On line 10, enter the contract number, if known:

10. UNKNOWN

(11) On line 11, indicate if the item is new or newly reworked, if known:

11. NEWLY REWORKED

(12) On line 12, enter the date the item was manufactured or reworked, if known:

12. 20 APR 87

(13) On line 13, enter the operating time at failure, if under warranty, or N/A if not:

13. 0

(14) On line 14, indicate if the item is Government Furnished Material (yes or no, if being reported by a commercial activity, N/A if not):

14. N/A

(15) On line 15, enter the actual number of deficient items:

15. ONE

(16) On line 16, enter the nomenclature of equipment that the deficient item works on or with, such as aircraft or next higher assembly.

16. LAU-7/A-5 Missile Launcher, F-14

(17) On line 17, enter the dollar value of the deficient material (not end item unless end item is lost or damaged), if known and the man-hours required to repair the item.

17. UNKNOWN

(18) On line 18, enter N/A.

18. N/A

(19) On line 19, indicate if the item is under warranty: yes, no, or unknown.

19. NO

(20) On line 20, enter the applicable work unit code if applicable; N/A if not applicable:

20. 751B600

(21) On line 21, The reporting activity will enter the action or disposition. If holding for investigation or disposition instructions, indicate the holding activity location, and time to be held at the activity. If the exhibit is a CAD or PAD item, provide the name of the holding station or ship ordinance department and the locally assigned turn-in document number. The FST will respond to the holding activity in all cases.

21. HOLDING EXHIBIT 30 DAYS AT WEAPONS DEPT USS INDEPENDENCE (CV-62) ON DOCUMENT NUMBER 0105/4008/E100

(22) In block 22, enter pertinent details which provide additional information concerning the explosive mishap.

In block 22A, provide a narrative description of abnormal function, known or probable causes, pertinent technical directives not incorporated, comments or recommendations (if any).

In block 22B, enter how safety of personnel or activity mission is affected.

In block 22C, enter the number of similar deficiencies in like items reported by the originating activity; for example, five in the past 4 months.

In block 22D, enter how the deficiency was detected or confirmed, such as, visually or functional operation, and when the deficiency was discovered, for example, maintenance or in flight.

In block 22E, enter storage/handling information, if applicable.

In block 22F, indicate if supporting documents will be supplied. When photographs are taken, place a ruler alongside the project so as to appear in each photograph. Measurements should also appear on sketches.

In block 22G, include the location of deficient materials.

In block 22H, if the item is a combined EMR/ CAT I PQDR, list the following:

1. Adverse environmental conditions prior to mishap (temperature, shock, vibration, exposure time, etc.).
2. Environmental conditions (visibility, precipitation, wind, ambient temperature, radio frequency energy field).
3. Nomenclature of explosive system or material (including complete round lot number and serial/ batch number, MK and MOD, NALC/DODIC and NSN).
4. Launching device and location (include serial numbers and complete MK and MOD number).
5. Fuze setting time in seconds, altitude in feet, fuze setter nomenclature, MK or MOD number, last calibration date, and where calibrated.
6. Number of captive flights.
7. Description of damage to explosive system(s).
8. Total number of explosive systems involved. Describe the event and the lot/serial and batch number, for example, 583 rounds M-50 series ammo; one round cooked off lot TP-50-72.
9. Number of remaining items from same lot or batch.
10. Item or fragments available.
11. Weight of explosive material involved (when bulk material).
12. If personnel error, provide information of personnel involved (qualification, rank, rate, etc.).
13. Contributing factors (distractions, technical documentation adequacy, etc.).
14. Delivery data (release airspeed/mach number, release dive angle, release interval, aircraft configuration, release altitude, release acceleration, turbulent or non turbulent flight conditions at release, delivery mode retard, non-retard, etc.).
15. Configuration (fuzes, plugs, etc., thermal protection).
16. Rigging (aircraft load configuration, aircraft station, multiple ejector rack or triple ejector rack station, etc.; type arming wire, routing or rigging for fuze, fins, etc.; arming solenoid used (nose, tail, etc.)).

17. Lessons learned (CAT I PQDR, CODR, or EMR).

In block 22I, enter the name, title, and DSN number of the cognizant official (E-7 and above). If deployed, so indicate.

4.6.16 Category II PQDR Standard Form 368 Preparation. Refer to figure 4-6-6 for Standard Form 368 Category II PQDR content, format, and preparation instructions.

NOTE

The Standard Form 368 will not be used to report Category I PQDRs. Check block for Category II at the top of the Standard Form 368 form.

4.6.17 FST Category I PQDR Response Preparation. The following instructions and examples apply when generating a FST preliminary or interim response to a Category I QDR. Examples of message entries are indicated by bold type. However, CAT II PQDRs are normally responded to by letter.

NOTE

Use of "MINIMIZE CONSIDERED" shall be in accordance with NTP-3.

a. Precedence: ROUTINE.

b. From/To Blocks. Complete these blocks as indicated below:

FM FST//Code//
TO Report Originator//Code//
AIG FOUR TWO THREE//
AIG ZERO SEVEN SIX TWO TWO//
AIG ONE ONE TWO//
AIG SEVEN SIX TWO ZERO//
AIG FOUR TWO//
Local Supply Activity holding exhibit
(Other action addressees as required)

c. Information Addressee Block. Include the appropriate information addressees. For further information, see paragraph 4.6.15c.

d. Message Security Classification Block. Security classifications are defined in the Department of the Navy Security Classification Guidance (OPNAVINST 5513.1E)

(NOTAL); however, every attempt should be made to employ UNCLAS to expedite routing.

e. Subject Block. Enter the information listed below:

SUBJ PRELIMINARY/INTERIM/CAT I PQDR RESPONSE//

f. List the applicable references using an alpha designator starting with "A" as indicated below:

REF/A/RMG/Originators DTG-RCN//
REF/B/DOC/OPNAVINST 8000.16A/1JUNE01//
REF/C/DOC/Other references as applicable (such as technical manual number)

g. The entries defined below respond to the technical entries submitted on the original PQDR. Each is prefaced by an assigned line number as shown on the following pages. The FST will carefully evaluate the need to request an exhibit. If the exhibit is essential in the investigation, request it from the originating point as soon as the need is known.

(1) On line 1, enter the nomenclature, part number and serial number of the deficient part(s).

(2) On line 2, enter the PQDR investigation and exhibit control number assigned. Refer to this control number and reference (a) on all related correspondence.

(3) On line 3, arrange for turn in of the exhibit. Ensure that the DD 1348-1 and all supporting documents are provided. Ensure condition code L is reported in card column 71 of the DD 1348-1 and boldly marked "PQDR EXHIBIT." Attach an exhibit tag (DD 2332) to the material. In large letters, stencil "PQDR EXHIBIT" to four sides of the shipping container. Ensure any special handling instructions are included.

(4) On line 4, ensure turn in of the exhibit in a condition code L via the supply holding point.

(5) On line 5, enter the shipping location of the exhibit (for example, Ship Exhibit to Supply Directorate Building XXX). Advise that facility of the mode of travel, document number, and date of shipment.

(6) On line 6, advise the activity of the point of contact, including facility, title, code, and DSN.

4.6.18 FST Final Category I PQDR Preparation. The following instructions and examples apply when generating a FST final response to a Category I PQDR. Examples of message entries are indicated by bold type.

PRODUCT QUALITY DEFICIENCY REPORT					<input type="checkbox"/> CATEGORY I		<input type="checkbox"/> CATEGORY II	
1a. FROM (Originator)				2a. TO (Screening Point)				
1b. NAME, TELEPHONE NO. AND SIGNATURE			1c. DATE	2b. NAME, TELEPHONE NO. AND SIGNATURE			2c. DATE	
3. REPORT CONTROL NO.		4. DATE DEFICIENCY DISCOVERED	5. NATIONAL STOCK NUMBER (NSN)			6. NOMENCLATURE		
7a. MANUFACTURER/CITY/STATE		7b. MFRS CODE		7c. SHIPPER/CITY/STATE			8. MFRS PART NO.	
9. SERIAL/LOT/BATCH NO.		10a. CONTRACT NO.	10b. PURCHASE ORDER NO.		10c. REQUISITION NO.		10d. GBL NO.	
11. ITEM <input type="checkbox"/> NEW <input type="checkbox"/> REPAIRED/ OVERHAULED		12. DATE RECD, MFRD, RE- PAIRED, OR OVERHAULED		13. OPERATING TIME AT FAILURE		14. GOVERNMENT FURNISHED MATERIAL <input type="checkbox"/> YES <input type="checkbox"/> NO		
15. QUANTITY		a. RECEIVED		b. INSPECTED		c. DEFICIENT		d. IN STOCK
16. DEFICIENT ITEM WORKS ON/WITH	a. END ITEM (AIRCRAFT, MOWER, ETC)	(1) TYPE/MODEL/SERIES					(2) SERIAL NO.	
	b. NEXT HIGHER ASSEMBLY	(1) NATIONAL STOCK NO. (NSN)		(2) NOMENCLATURE		(3) PART NO.		(4) SERIAL NO.
17. UNIT COST \$		18. ESTIMATED REPAIR COST \$		19a. ITEM UNDER WARRANTY <input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> UNKNOWN			19b. EXPIRATION DATE	
20. WORK UNIT CODE/EIC (NAVY AND AIR FORCE ONLY)								
21. ACTION/DISPOSITION <input type="checkbox"/> HOLDING EXHIBIT FOR ____DAYS <input type="checkbox"/> RELEASED FOR INVESTIGATION <input type="checkbox"/> RETURNED TO STOCK <input type="checkbox"/> DISPOSED OF <input type="checkbox"/> REPAIRED <input type="checkbox"/> OTHER (EXPLAIN IN ITEM 22)								
22. DETAILS (Describe, to best ability, what is wrong, how and why, circumstances prior to difficulty, description of difficulty, cause, action taken, including disposition, recommendations. Attach copies of supporting documents. Continue on separate sheet if necessary.)								
SAMPLE								
23. LOCATION OF DEFICIENT MATERIAL								
24a. TO (Action Point)				25a. TO (Support Point) (Use Items 26 and 27 if more than one)				
24b. NAME, TELEPHONE NO. AND SIGNATURE			24c. DATE	25b. NAME, TELEPHONE NO. AND SIGNATURE			25c. DATE	
26a. TO (Support Point)				27a. TO (Support Point)				
26b. NAME, TELEPHONE NO. AND SIGNATURE			26c. DATE	27b. NAME, TELEPHONE NO. AND SIGNATURE			27c. DATE	
NSN 7540-00-133-5541 STANDARD FORM 368 (REV. 10-85)								

**Figure 4-6-6 Sample Category II Product Quality Deficiency Report
Using Standard Form 368 (Front)**

28. FINDINGS AND RECOMMENDATIONS OF INVESTIGATION. (Explain in detail. Continue on separate sheet of paper, if necessary)
SAMPLE
29. ACTION TAKEN
30. RESULTS OF DEPOT SURVEILLANCE
<p style="text-align: center; font-weight: bold;">INSTRUCTIONS</p> <p>1a. FROM (Originator) Complete name of activity (no acronyms when sending deficiency report across component lines), activity address code (ACC), address including zip code of the activity originating the report.</p> <p>1b. NAME, TELEPHONE NO., AND SIGNATURE Provide name, telephone no. (including all available telephone numbers; FTS; DSN, and commercial), and signature of an individual who can serve as a contact for questions regarding the report and/or to request exhibits or samples.</p> <p>1c. DATE Enter date report was signed and forwarded to the screening or action point.</p> <p>2a. TO (Screening Point) The originating point will complete name of the screening point activity (no acronyms when deficiency report will be sent across component lines), the activity address code (AAC), address including zip code of screening point where the report needs to be sent by the originator's activity. For those activities that do not have screening points, leave blank.</p> <p>2c. DATE Enter the date the person finished processing the report at the screening point.</p> <p>3. REPORT CONTROL NO. Number assigned to report when a numbering system is used. Those activities which are reporting quality deficiencies across component lines and are to comply with the DLA Regulation 4155.24 should reference the report control number as prescribed in the regulation.</p> <p>7a. MANUFACTURER/CITY/STATE Name of the manufacturer, the maintenance contractor, or Government activity which last repaired or overhauled the deficient item. For motor vehicles or components thereof, enter name of manufacturer of the vehicle or component, as appropriate.</p> <p>7b. MANUFACTURER'S CODE Code of the manufacturer as listed in cataloging Handbook H4.1 (Name to code), Federal Code for Manufacturers (United States and Canada).</p> <p>7c. SHIPPER/CITY/STATE When the shipper of an item is different from the manufacturer, also include the shipper's or supplier's name.</p> <p>9. SERIAL/LOT/BATCH NO. Manufacturer's serial, lot, or batch number of deficient item as applicable.</p> <p>10. CONTRACT; PURCHASE ORDER; REQUISITION; GOVERNMENT BILL OF LADING (GBL) NO. Enter these numbers or any other available transportation document number in lieu of the GBL. Such numbers appear on the container, purchase document and/or the item. It is extremely helpful if these items are furnished when the material was supplied by GSA.</p> <p>11. ITEM Check the appropriate block; provide the dates manufactured and received in Block 12, if available.</p> <p>13. OPERATING TIME AT FAILURE Time item had been in operation since new, overhauled, or repaired when the deficiency was discovered, citing the appropriate performance element (miles, cycles, hours, etc.).</p> <p>15c. QUANTITY DEFICIENT Enter the quantity found deficient of those inspected.</p> <p>15d. QUANTITY IN STOCK Enter the quantity of material from the same manufacturer remaining in stock.</p> <p>17. UNIT COST Dollar value of deficient item when known. Not applicable on reporting vehicles to GSA.</p> <p>18. ESTIMATED REPAIR COST Unit cost times number of units for replacement or estimated repair costs (including overhead) times number of units for correcting all the deficient items reported when it can readily be determined. Not applicable on reporting vehicles to GSA.</p> <p>19. ITEM UNDER WARRANTY Check if item is known to be covered by contractor warranty. If yes, provide expiration date.</p> <p>21. ACTION/DISPOSITION A check in the appropriate block to indicate the action taken or requested. When an exhibit or sample is being held, indicate the number of days in the space provided. (An exhibit or sample shall be held for a minimum of 30 calendar days from date the report is transmitted to the action point. Reporting activities are reminded that the packaging, packing, and shipping containers are to be held along with the exhibits to facilitate investigation.) When none of the items indicate the actions or disposition taken or requested, check "Other" and identify the nature of action taken or requested in item 22.</p> <p>23. LOCATION OF DEFICIENT MATERIAL Address and location of deficient material.</p> <p>24. TO (Action Point) Name, and clear address, including zip code of the action point to which the report is being submitted.</p> <p>24c. DATE Enter the date the report was forwarded to an action point or the date the findings and recommendations were completed.</p> <p>28. FINDINGS AND RECOMMENDATIONS OF INVESTIGATION Include the findings and recommendations for resolution of complaint.</p> <p>29. ACTION TAKEN State the action taken to resolve the complaint.</p> <p>30. RESULT OF DEPOT SURVEILLANCE Show results of depot surveillance and planned action (i.e., replacement or repair by contractor, disposal, issue, etc.).</p>
<div style="display: flex; justify-content: space-between;"> *U.S. GPO: 1986-496-360 STANDARD FORM 368 (REV. 10-85) </div>

**Figure 4-6-6. Sample Category II Product Quality Deficiency Report
Using Standard Form 368 (Back) (Cont'd)**

NOTE

Use of "MINIMIZE CONSIDERED" shall be in accordance with NTP-3 (NOTAL).

a. Precedence: ROUTINE

b. From/To Blocks. Complete these blocks as indicated below:

FM FST//Code//
TO Report Originator//Code//
All activities being asked by this message to take action
AIG FOUR TWO THREE//
AIG ZERO SEVEN SIX TWO TWO//
AIG ONE ONE TWO//
AIG SEVEN SIX TWO ZERO//
AIG FOUR TWO ZERO//

c. Information Addressee Block. Include the appropriate information addressees. For further information, see paragraph 4.6.15c.

d. Message Security Classification Block. Security classifications are defined in the Department of the Navy Security Classification Guidance (OPNAVINST 5513.1E NOTAL); however, every attempt should be made to employ UNCLAS to expedite routing.

e. Subject Block. Enter the information listed below:

SUBJ FINAL PQDR RESPONSE

f. List the applicable references using an alpha designator starting with "A" as indicated in the following:

REF/A/DOC/OPNAVINST 8000.16A/1JUNE01//
REF/B/Originating PQDR request DTG
REF/C/Initial response DTG//

(Include only the instructions or references that are applicable to the occurrence.)

g. The entries defined below respond to the technical entries submitted on the original PQDR. Each is prefaced by an assigned line number as shown on the following pages.

(1) On line 1, enter the reporting custodian or unit identification code (Item 1 of the PQDR).

(2) On line 2, enter the report control number (Item 3 of the PQDR).

(3) On line 3, enter the nomenclature, part number, and serial number of the defective item.

(4) On line 4, enter the name of the activity performing the investigation.

(5) On line 5, enter the exhibit control number (from initial FST response).

(6) On line 6, enter the background of the deficiency. Tie in references (a) through (c); synopsize the conditions surrounding the PQDR generation; tie in additional references as appropriate.

(7) On line 7, enter a description of findings. Describe completely the findings of the investigation. This description shall include the name and part number of primary and secondary part failures, as appropriate. Names and part numbers of discrepant parts and components should also be reported. If applicable, indicate that photographs and additional supportive documentation will follow by separate correspondence. Restrict narrative to facts only.

(8) On line 8, state conclusions briefly and concisely as to technically possible sequence of events leading to the findings outlined in item 7 above. Identify causative factors in operating and maintenance procedures, publications, support equipment, design, etc., as applicable.

(9) On line 9, make recommendations, as appropriate, for remedial action to minimize recurrence of indicated troubles. Identify each recommendation with an alpha subparagraph.

(10) On line 10, enter related information and pertinent technical directives. Provide additional information which will clarify the problem, for example, historical failure data, on-going studies, programs and investigations, rationale which led to the FST recommendations cited in item 9 above. Identify those technical directives and other modifications which pertain to the trouble, malfunction, or failure. Also note whether or not these technical directives or other modifications were incorporated in the item inducted for disassembly and inspection.

(11) On line 11, indicate any pending action. Describe in detail the requested action desired to implement the recommendation. For each action item, identify the activity being requested to take action and identify each action item with an alpha subparagraph which corresponds to the appropriate subparagraph in Item 10.

(12) On line 12, indicate closing action. Describe the status of the PQDR; if action is complete, insert one of the following statements:

EI FOR REF B PQDR NOT WARRANTED BECAUSE (STATE REASON). THIS MESSAGE CONSTITUTES CLOSING ACTION ON REF B.

or

THIS IS CONSIDERED FINAL ACTION ON PQDR CONTROL NUMBER XXX.

(13) On line 13, enter the FSTs point of contact by name and provide title, code, and DSN.

4.6.19 Engineering Investigation Reporting Program. (EIR).

4.6.19.1 EIR. The EIR applies to all aircraft and weapon systems, their subsystems, equipment, components, related support equipment, special tools, fluid or materials, and test program tests used in the operation of the equipment. Types of EIRs conducted are disassembly and inspection, material analysis, and engineering assistance. The EIR program performs the following functions:

- a. Provides an investigation process to determine the cause and depth of fleet reported material failures.
- b. Supports the investigation of material associated with ordnance mishaps, lightning strikes, electromagnetic interference, and stray voltage problems.
- c. Provides engineering assistance relating to any ordnance problem.
- d. Supports the mandatory investigation requirements prescribed by OPNAVINST 3750.6Q (NOTAL) for activated aircraft escape systems.

4.6.19.2 Safety. Safety considerations include the following:

- a. All hands have a responsibility to be alert for defects and discrepancies having an adverse effect on safety.
- b. Safety shall be the primary consideration when submitting the request outlined in this chapter.

4.6.19.3 Reporting Procedures. Submit all deficiency reports to the FST for the component or ordnance item with information copies, as appropriate. Refer to figure 4-6-1 for FST assignments. If COMNAVAIRSYSCOM is listed as the FST or if the FST cannot be determined, the report shall be sent to the cognizant maintenance office within COMNAVAIRSYSCOM.

4.6.19.4 Report Numbering. A report control number will be assigned for each airborne weapon deficiency report. For additional information on assigning a report control number, see paragraph 4.6.13.2. Reference the report control number and message DTG of the originating activity on all supplemental correspondence. Include shipping information and

the exhibit control number. Retain a copy of the reports for 1 year.

4.6.19.5 Response to Deficiency Reports The FST, or cognizant action point, is required to respond to all deficiency reports. When a reply has not been received the originating activity shall initiate follow-up action to the FST or screening point by message or other appropriate means.

4.6.20 Engineering Investigation Request (EIR) Message Preparation. The following instructions and examples apply to EIR message reports. Examples of message entries are in bold type. For example of completed EIR message; refer to figures 4-6-7.

NOTE

Use of "MINIMIZE CONSIDERED" shall be in accordance with NTP-3 (NOTAL).

- a. Precedence: ROUTINE.
- b. From/To Blocks. Complete these blocks as indicated below.

FM Message Originator//Code//
TO FST//Code//
AAC EGLIN AFB FL//YAL/268L//
(If Mishap Involves AIM-120 Missile)
AIG FOUR TWO THREE//
AIG ZERO SEVEN SIX TWO TWO//
AIG ONE ONE TWO//
AIG SEVEN SIX TWO ZERO// (See below)
AIG FOUR ZERO TWO// (See below)

NOTE

See OPNAVINST 5102.1C for appropriate AIG.

When a mishap involves an explosive system launch device or AWSE, include AIG 7620 in the "To" line.

When an explosive mishap involves a torpedo, mine, depth charge, or pyrotechnic device, include AIG 402 in the "To" line.

- c. Information Addressee Block. Include the information addressees as indicated in the following:

- (1) Include the cognizant inventory control point when reporting defective new material.

- (2) Include the cognizant functional wing(s).

- (3) Include the cognizant commander, Marine Aviation Logistics Squadron(s) and aircraft wing(s).

(4) When flight safety considerations involve aircraft or equipment common to the Air Force, Army, or Coast Guard, address an information copy to the appropriate command as indicated below:

Air Force: **AFISC Norton AFB CA**
AFCL Wright Patterson AFB OH
//QE//

Army: **CDRAVSCOM STL MO**
//AMSAVQIAG//
CDRUSASC FT RUCKER AL
//PESCD//

Coast Guard: **COMDT COGARD Washington DC**

(5) When flight safety conditions concern H-1, 3, 46E/F, or 53D/E aircraft, information copies are addressed to Marine Helicopter Squadron ONE (HMX-1).

(6) Include the COMNAVAIRWARCENWPNDIV China Lake CA, only when the CODR pertains to weapons loading procedures in COMNAVAIRSYSCOM airborne weapons and stores loading manuals and checklists.

(7) Include the supporting station or ship intermediate maintenance activity.

(8) Refer to OPNAVINST 5102.1C (NOTAL) for additional information/addressees when submitting a CODR or EMR.

d. Message Security Classification Block. Security classifications are defined in the Department of the Navy Security Classification Guidance (OPNAVINST 5513.1E) (NOTAL); however, every attempt should be made to employ UNCLAS to expedite routing. When a technical manual is referenced, include the issue date and the latest change date.

e. Subject Block. List the applicable subject or combination of subjects, for example, EIR.

SUBJ Engineering Investigation Request (EIR)//

f. Reference Block. List the applicable references using an alpha designator starting with "A" as indicated below:

REF/A/DOC/OPNAVINST 8000.16A/1JUNE01/

g. The entries defined below describe technical entries which are required to properly document the deficiency. Each is prefaced by an assigned line number as shown on the following pages:

(1) On line 1, enter the reporting custodian and unit identification code as shown below:

1. VMA-211/09412

(2) On line 2, enter the FST for the failed item.

2. NAVAIRWARCENWPNDIV

(3) On line 3, enter the report control number as shown below. See paragraph 4.6.13.2 for additional information on the report control number.

3. R-09412-89-0031

(4) On line 4, enter the Julian date the deficiency was discovered and the location of the reporting unit as shown below. Omit the location if the entry will cause the message to become classified.

4. 9341

(5) On line 5, enter the national stock number of the failed material.

5. 1325-00-234-0071

(6) On line 6, enter the nomenclature of the item.

6. MK 13 MOD 0 INITIATOR

(7) On line 7, indicate the manufacturer's name (and unit identification code) and the shipper's name. For reworked material, enter the last rework activity if known.

7. RAYTHEON/30003/UNK

(8) On line 8, enter the manufacturer's part number:

8. DL2601820

FM VMFA THREE TWO THREE//AMO// **(MESSAGE ORIGINATOR OFFICE CODE)**

TO NAVAIRWARCENWPNDIV CA//321000E// **(OR APPLICABLE OFFICE CODE)**

AAC EGLIN AFB FL//YAL/268L// **(FOR AIM-120 MISSILE)**

ACC YU EGLIN AFB FL//YU/YUP// **(FOR JDAM)**

AIG ZERO SEVEN SIX TWO TWO//

AIG ONE ONE TWO//

AIG SEVEN SIX TWO ZERO//

AIG FOUR TWO THREE//

AIG FOUR ZERO TWO// **(SEE OPNAVINST 5102.1C FOR APPROPRIATE AIG)**

INFO COMNAVAIRWARCENWPNDIV CHINA LAKE CA// **(APPLICABLE OFFICE CODE)**

ASO FA EIGHTEEN ARF LEMOORE CA// **(APPLICABLE OFFICE CODE)**

MALS ELEVEN//AMO/ASO/ORDO//

AIG SIX NINE EIGHT FIVE//

CG THIRD MAW//ALD//

BT

UNCLAS //N08000//

SUBJ: ENGINEERING INVESTIGATION REQUEST (EIR)

MSGID/GENADMIN/VMFA THREE TWO THREE//

REF/A/DOC/OPNAVINST 8000.16A/1JUNE01//

REF/B/DOC/OPNAVINST 5102.1C/**(DATE OF REFERENCE)**//

REF/C/DOC/A1-F18AC-LWS-210//

REF/D/DOC/A1-F18AC-LWS-530//

NARR/REFS PERTAIN TO EIR REPORTING PROGRAM//

RMKS/

1. VMFA-323/09235
2. NAVAIRWARCENWPNDIV
3. R09235-89-0038
4. 9332/MCAS EL TORO CA
5. 1427-01-114-2054
6. WGU-4A/B AIM-9 GUIDANCE AND CONTROL SECTION NALC PM55
7. RAYTHEON/30003/UNK
8. 639AS3963
9. SER NO. LOR-00184
10. THRU 13. UNK
14. N/A
15. ONE
16. A. F-18A
- B. CATM-9M-2 NALC PC61
17. \$25,000.00/UNK
18. N/A
19. UNK
20. 75M12
21. HOLDING AT MALS-11 ORD. FST RESPONSE REQUIRED

Figure 4-6-7. Sample Engineering Investigation Request Message

22. A. PILOT REPORTED THAT DURING FLIGHT CATM-9M MISSILE WOULD NOT TRACK. AFTER FLIGHT, MISSILE WAS MOVED TO A DIFFERENT STATION ON SAME AIRCRAFT. MISSILE FAILED TO TRACK ON NEXT FLIGHT. MISSILE WAS SUBSEQUENTLY TRANSFERRED TO TWO DIFFERENT AIRCRAFT AND FAILED TO TRACK ON EACH OF THEM. ALL AIRCRAFT WERE CHECKED END TO END PER REF (C) WITH NO DISCREPANCIES FOUND. ALL LOADING AND DOWNLOADING WAS PERFORMED PER REF (D).
- B. LOSS OF TRAINING ASSET
- C. EIGHT IN 24 MONTHS
- D. IN FLIGHT/3 DIFFERENT AIRCRAFT
- E. TURNED IN TO MALS-11 ORDNANCE
- F. NONE
- G. N/A
- H. 1. N/A
 2. CLEAR
 3. CATM-9M MISSILE NALC PC61
 4. LAU-7/A-6 F/A-18A WINGTIP
 5. N/A
 6. 102 FLIGHTS FOR 213.9 FLIGHT HOURS
 7. UNK
 8. UNK
 9. UNK
 10. YES
 11. 185 LBS
 12. THRU 17 N/A
- I. 1STLT CONSTANT, QAD, DSN 997-6833
- J. F/A-18A/162414/162418/162474/
- K. N/A
- L. N/A//

DECL/OADR// (IF MESSAGE IS CLASSIFIED)

BT

Figure 4-6-7. Sample Engineering Investigation Request Message (Cont'd)

(9) On line 9, enter the serial and lot/batch number and indicate the number used:

9. 4-C-75

(10) On line 10, enter the contract number, if known:

10. UNKNOWN

(11) On line 11, indicate if the item is new or reworked, if known:

11. UNKNOWN

(12) On line 12, enter the date the item was manufactured or reworked, if known:

12. APRIL 1975

(13) On line 13, enter the operating time at failure, if under warranty:

13. UNKNOWN

(14) On line 14, indicate if the item is government furnished material (yes or no, if being reported by a commercial activity; N/A if not):

14. N/A

(15) On line 15, enter the actual number of deficient items:

15. ONE

(16) On line 16, enter the nomenclature of equipment that the deficient item works on or with, such as aircraft or next higher assembly:

**16. A. A-4M/158428
B. MK 77 MOD 5 FIREBOMB**

(17) On line 17, enter the estimated cost to replace or repair the deficient, damage, or lost item (if known). Provide a total cost to replace all hardware. Use the standard figure of 16 dollars per hour for repair/replace labor. Do not list total cost of item unless the item cannot be repaired.

17. \$85.00

(18) On line 18, enter N/A for all CODRs/ EMRs/ EIRs:

18. N/A

(19) On line 19, indicate if the item is under warranty (yes, no, or unknown):

19. UNKNOWN

(20) On line 20, enter the applicable work unit code:

20. WUC

(21) On line 21, The reporting activity will enter the action or disposition. If holding for investigation or disposition instructions, indicate the holding activity location, and time to be held at the activity. If the exhibit is a CAD or PAD item, provide the name of the holding station or ship ordnance department and the locally assigned turn-in document number. If no response is required by the reporting activity, specify that "FST response to reporting activity is not required". The FST will respond to the holding activity in all cases where the reporting activity requested no response, but the exhibit is being held and has not been returned to service.

21. HOLDING EXHIBIT 30 DAYS AT WEAPONS DEPT USS INDEPENDENCE (CV-62)

(22) In block 22, enter pertinent details which provide additional information concerning the deficiency or explosive mishap.

In block 22A, provide accurate details in the narrative description of the chain of events leading up to, through and subsequent to the mishap or deficiency declared whether mishap or deficiency was "induced" (error caused in some manner at the reporting activity), or "discovered" (damage not caused by reporting activity but revealed during inspection or test). Provide as much information as possible including suspected or known causes. State whether pertinent technical directives are incorporated. Provide comments, recommendations and lessons learned. Include statement that photographs will be sent (if applicable). Request Engineering Investigation as required.

In block 22B, enter how safety of personnel or activity mission is affected.

In block 22C, enter the number of similar deficiencies in like items reported by the originating activity: for example, five in the past four months.

In block 22D, enter how the deficiency was detected or confirmed, such as, visually or functional operation where a deficiency was discovered: for example, maintenance or in flight.

In block 22E, enter any applicable storage or handling information.

In block 22F, indicate if supporting documents will be supplied. When photographs are taken, place a ruler alongside the object so as to appear in each photograph. Measurements should also appear on sketches.

In block 22G, include a description of incorrectly identified new material, if applicable.

In block 22H, list the following if applicable:

1. Adverse environmental conditions prior to mishap (temperature, shock, vibration, exposure time, etc.).
2. Environmental conditions (visibility, precipitation, wind, ambient temperature, radio frequency energy field).
3. Nomenclature of explosive system or material (including complete round lot number, and serial/batch number, MK and MOD number, NALC/DODIC, and NSN).
4. Launching device and location (include serial numbers and complete MK and MOD number).
5. Fuze setting time in seconds, altitude in feet, fuze setter nomenclature, MK and MOD number, last calibration date, and where calibrated.
6. Number of captive flights.
7. Description of damage to explosive system(s).
8. Total number of explosive systems involved. Describe the event and the lot/batch or serial number, for example, 583 rounds M-50 series ammunition; one round cooked off lot TP-50-72.
9. Number of remaining items from same lot or batch.
10. Item or fragments available.
11. Weight of explosive material involved (when bulk material).
12. If personnel error, provide qualification and certification status, rank and designator, rate and NEC, grade, job title and employment status (USN, USNR, USNR-R, other DoD personnel, Navy federal civil servants, contractors, foreign military exchange personnel and foreign civilians).
13. Was supervisor or safety observer present.

14. Contributing factors (distractions, technical documentation adequacy, etc.).

15. Delivery data (release airspeed/mach number, release dive angle, release interval, aircraft configuration, release altitude, release acceleration, turbulent or non turbulent flight conditions at release, delivery mode retard, non-retard, etc.).

16. Configuration (fuzes, plugs, etc.; and thermal protection).

17. Rigging (aircraft load configuration, aircraft station, MER/TER station, type arming wire, routing/rigging for fuze, fins, arming solenoid used (nose, tail, etc.)).

In block 22I, enter the name, title, and DSN of the cognizant official (E-7 and above); (if deployed, so indicate).

In block 22J, enter the weapon or component serial number if not included.

In block 22K, enter any additional information.

4.6.21 CODR/EMR/EIR Response Preparation. The following instructions and examples apply when generating a FST preliminary, interim, or closing response to a CODR/EMR/EIR. Examples of message entries are indicated by bold type.

NOTE

Use of "MINIMIZE CONSIDERED" shall be in accordance with NTP-3 (NOTAL).

a. Precedence: ROUTINE.

b. From/To Blocks. Complete these blocks as indicated below:

FM FST//Code//
TO Report Originator//Code//
AIG FOUR TWO THREE//
AIG ZERO SEVEN SIX TWO TWO//
AIG ONE ONE TWO//
AIG SEVEN SIX TWO ZERO//
AIG FOUR ZERO TWO//
Local Supply Activity holding exhibit
(Other action addresses as required)

c. Information Addressee Block. Include the local supply activity and other appropriate information addressees.

d. Message Security Classification Block. Security classifications are defined in the Department of the Navy Se-

curity Classification Guidance (OPNAVINST 5513.1E) (NOTAL); however, every attempt should be made to employ UNCLAS to expedite routing.

e. Subject Block. Enter the information listed below:

SUBJ PRELIMINARY/INTERIM/CODR/EMR/EIR RESPONSE//

f. List the applicable references using an alpha designator starting with "A" as indicated below:

REF/A/Originators DTG-RCN//
REF/B/DOC/OPNAVINST 8000.16A/1JUNE01//
REF/C/Other references as applicable (such as technical manual number)

g. The entries defined below respond to the technical entries submitted on the original CODR/EMR/EIR. Each is prefaced by an assigned line number as shown on the following pages:

(1) On line 1, enter the nomenclature, part number and lot/serial number of the subject part(s).

(2) On line 2, enter the CODR, EMR, or EIR, AWCAP number and exhibit control number assigned. Refer to this control number and reference (a) on all related correspondence.

(3) On line 3, arrange for turn-in of the exhibit. Ensure that the DD Form 1348-1 and all supporting documents are provided.

(4) On line 4, ensure turn-in of the exhibit in condition code L via the supply holding point.

(5) On line 5, enter the shipping location of the exhibit (for example, Ship exhibit to Supply Directorate Building XXX). Advise that facility of the mode of travel, document number, and date of shipment. If the exhibit is not available at your supply holding point within 5 days, advise the FST by message.

(6) On line 6, advise the activity of the point of contact, including facility, title, code, and DSN.

4.6.22 FST Final CODR/EMR/EIR Preparation. The following instructions and examples apply when generating a FST final report to a CODR/EMR/EIR. Examples of message entries are indicated by bold type.

NOTE

Use of "MINIMIZE CONSIDERED" shall be in accordance with NTP-3 (NOTAL).

a. Precedence: ROUTINE.

b. From/To Blocks. Complete these blocks as indicated below:

FM FST//Code//
TO Report Originator//Code//
All activities being asked by this message to take action
AIG FOUR TWO THREE//
AIG ZERO SEVEN SIX TWO TWO//
AIG ONE ONE TWO//
AIG SEVEN SIX TWO ZERO//
AIG FOUR ZERO TWO//

c. Information Addressee Block. Include the appropriate information addressees.

d. Message Security Classification Block. Security classifications are defined in the Department of the Navy Security Classification Guidance (OPNAVINST 5513.1E) (NOTAL); however, every attempt should be made to employ UNCLAS to expedite routing.

e. Subject Block. Enter the information listed below:

SUBJ FINAL CODR/EMR/EIR REPORT

f. List the applicable references using an alpha designator starting with "A" as indicated below:

REF/A/OPNAVINST 8000.16A/1JUNE01//
REF/B/Originating request DTG//
REF/C/Initial response DTG/NAVGRAM Ser No.//
(Include only the instructions/references that apply to the occurrence.)

g. The entries defined below respond to the technical entries submitted on the original CODR/EMR/EIR. Each is prefaced by an assigned line number as shown on the following pages:

(1) On line 1, enter the reporting custodian or unit identification code (Item 1 of originators report).

(2) On line 2, enter the report control number (Item 3 of originators report).

(3) On line 3, enter the nomenclature, part number, and lot/serial number of the item.

(4) On line 4, enter the name of the activity performing the investigation.

(5) On line 5, enter the exhibit control number (take from the initial FST response).

(6) On line 6, enter of the background of the mishap. Tie in references (a) through (c); synopsise the conditions surrounding the EIR generation; tie in additional references as appropriate.

(7) On line 7, enter a description of findings. Describe completely the findings of the investigation. This description shall include the name and part number of primary and secondary part failures, as appropriate. Names and part numbers of discrepant parts and components should also be reported. If applicable, indicate that photographs and additional supportive documentation will follow by separate correspondence. Restrict narrative to facts only.

(8) On line 8, state conclusions briefly and concisely as to technically possible sequence of events leading to the findings outlined in item 7 above. Identify causative factors in operating and maintenance procedures, publications, support equipment, design, etc., as applicable.

(9) On line 9, make recommendations, as appropriate, for remedial action to minimize recurrence of indicated troubles. Identify each recommendation with an alpha subparagraph.

(10) On line 10, enter related information and pertinent technical directives. Provide additional information which will clarify the problem, for example, historical failure data, on-going studies, programs and investigations, rationale which led the FST to the recommendations cited in item 9 above. Identify those technical directives and other modifications which pertain to the trouble, malfunction, or failure. Also note whether or not these technical directives or other modifications were incorporated in the item induced for the disassembly and the inspection.

(11) On line 11, indicate any pending action. Describe in detail the requested action desired to implement the recommendation. For each action item, identify the activity being requested to take action and identify each action item with an alpha subparagraph which corresponds to the appropriate subparagraph in item 10.

(12) On line 12, enter the FST point of contact by name, title, code, and DSN.

4.6.23 Handling and Preparation of EI Material. The supporting activity will hold defective material until disposition instructions are received from the FST or directing authority.

NOTE

Any material to be released to an authorized contractor's representative or shipped directly to a contractor's plant shall be processed through the supporting supply department. Supply can issue the material on a custody basis only after receiving authority from the FST.

a. Maintain material in an "as is" condition, ensuring that the EI exhibit control number assigned by the FST appears on all documents, exhibits, and packaging. When a hazardous condition is evident, request shipping instructions from the FST.

b. Take special care to cap or package material immediately upon removal from the system in such a manner as to prevent corrosion, contamination, or other damage that JUNE contribute to confusion or loss of possible cause factors. Do not attempt any adjustments, disassembly, or perform any type of cleaning, externally or otherwise. If any adjustment, disassembly, or cleaning was done during a local investigation, a list of particulars describing the local investigation must accompany the material to the FST.

c. Do not attempt to reassemble fragments of failed material. Wrap each fragment separately to prevent damage caused by relative movement. When feasible, forward associated accessories, components, or material suspected of contributing to the malfunction or mishap. Do not touch failed surfaces as this could mask failure data.

d. If the defective component is an explosive cartridge, CAD, or PAD, turn in the defective material to the weapons or ordnance department with a DD 1348-1, and obtain a locally assigned turn-in document number. Include this turn-in document number and name of the holding activity on the EIR.

e. Attach the EIR and applicable documentation to the component or assembly. Ensure that the EI exhibit is marked with the EI exhibit control number.

4.6.23.1 Responsibilities of Other Activities Involved in EI Processing. The FST shall take action on all EIR. The FST JUNE request assistance in accomplishing an EI or initiate an EI within the FST organization, when a problem is suspected which has not been reported. The following are responsibilities of other naval activities:

a. COMNAVAIRSYSCOM. If the FST is unable to accomplish an EI because of equipment or facility limitations, specialized engineering discipline requirements, or other reason(s), the FST will request assistance from an appropriate Navy technical activity or contractor establishment. Assistance from other FST will be requested by message or NAVGRAM with an information copy to COMNAVAIRSYSCOM. Assistance from other Navy technical activities or contractors will be requested by the FST to the appropriate COMNAVAIRSYSCOM code. When contractor assistance is required and a support contract exists, request for assistance JUNE be made directly to the appropriate administrative contracting office by message. Approval by COMNAVAIRSYSCOM is required prior to obligating funds for any contractor assistance services. NA-DOC is responsible for the timeliness of EI completion and

coordination of follow-up actions when acting as FST. Responsibility for EIs rests with the appropriate COMNAV-AIRSYSCOM code.

b. COMNAVSAFECEN. OPNAVINST 3750.6Q (NOTAL) OPNAVINST 5102.1C (NOTAL) and OPNAVINST 5100.19D (NOTAL) provides that the COMNAVSAFECEN assign a representative to assist when requested, and in certain special cases to conduct independent safety investigations. As a direct representative of the Chief of Naval Operations, this investigating officer will control the ordnance material undergoing EI until released. The COMNAVSAFECEN investigator shall be accorded full information, cooperation, and the use of facilities necessary for proper discharge of the assignment.

c. Support Activity. The support activity is any activity having the responsibility for shipping or receiving EI related material. When requested, support activities shall prepare the material for shipment and ship it to the FST. Support activities receiving material are responsible for maintaining identification of the material and expeditiously forwarding the material to the FST.

d. Action Activity. Activities responsible for investigations shall take action on EIR as shown in the following paragraphs:

(1) Examine the request to determine if the correct FST is involved. If not, readdress the request to the correct FST for action and inform the originator of the action taken. Cite the originator's message DTG and the report control number or mishap number on the message and ensure that all addressees are on the originator's messages are included in distribution.

(2) Conduct liaison with the request originator as required to obtain amplifying or clarifying information on the reported discrepancy or failure.

(3) Study the history of failures and determine the need for and value of an EI on the equipment or material in question.

(4) When study or liaison indicates that an EI is not required, inform the request originator by message, including rationale and reasons. Ensure all addressees on the originator's message and any other required addressees are included in distribution.

(5) When it is determined that an EI is required, assign an investigation control number and provide shipping instructions for the discrepant equipment or material. Whether requesting the equipment or material exhibit or stating that no investigation is required, a message response shall be provided to the originating activity.

NOTE

Any cartridge, CAD, or PAD suspected of being defective, which JUNE cause a failure of the emergency system, shall be reported as a combined CODR/EI. If requested, the item shall be air shipped to the Naval Surface Warfare Center Division, Indian Head, MD, upon receipt of the request for the EI material and the military standard requisitioning and issue procedure shipping document number provided by Naval Surface Warfare Center Division, Indian Head, MD.

(6) Follow-up on equipment or material non-receipt. Under normal circumstances, follow-up shall be made 20 days after the response message but the period JUNE be extended if it is known that shipment will take longer than 20 days. As a minimum, follow-up shall include a message to the EIR originator and checks with the local supply activity and investigating activity receiving area. All possible follow-up actions shall be taken, particularly on equipment or material related to combined CODR and mishaps.

(7) Prepare and submit EIR reports. Preliminary message reports on investigations related to ordnance mishaps shall normally be provided within 5 working days of receipt or induction of the exhibit, with a final report following within 30 working days of the preliminary report.

(8) Return or provide for the return of the unserviceable equipment or material to the Navy supply system under the COMNAVAIRSYSCOM Master Repairables List after completing the investigation, unless otherwise directed. Serviceable ready-for-issue material shall be certified as such and forwarded to the supporting naval supply center. If the equipment or material is extensively disassembled and salvageable, it JUNE be inducted for rework and should be entered into the supply system inventory under the proper condition code. In the case of mishap investigations, the senior member of the mishap board or the assigned NAVSAFECEN investigator has proprietary interest in equipment or material being investigated; no disposition shall be made until released under governing instructions.

4.6.24 TPDR Program. This program provides a simplified procedure for reporting technical publication safety hazards and routine deficiencies.

4.6.24.1 A Category I TPDR message is required when a technical publication deficiency is detected which, if not corrected, could result in death or injury to personnel or damage to or loss of aircraft, equipment, or facilities. They are to be reported using Category I TPDR message format. For an example of a completed Category I TPDR message,

refer to figure 4-6-8. Instructions for completing a Category I TPDR message are contained in paragraph 4.6.25.

4.6.24.2 Category II publication deficiencies include technical errors, incorrect measurement values, incorrect use of support equipment, incorrect sequence of adjustments, part number errors or omissions, and microfilm deficiencies such as poor film quality that do not meet the Category I reporting criteria. These are to be reported using a TPDR Form (OPNAV 4790/66). The instructions for completing an OPNAV 4790/66 are printed on the reverse side of the form. Refer to figure 4-6-9.

4.6.24.3 Technical publications include maintenance requirement cards, checklists, work unit code manuals, shop process cards, maintenance instruction manuals, weapons stores loading manuals, conventional and nuclear weapon checklists, stores reliability cards, illustrated parts breakdowns, technical directives, and technical manuals. The TPDR Program is not applicable when reporting deficiencies in instructions or notices.

4.6.24.4 Reporting Procedures. Submit Category I TPDR messages to Naval Air Technical Data and Engineering Services Command (NAVAIRTECHDATAENGSRVCOM) and the cognizant field activity. (FST) Submit Category II TPDRs using OPNAV 4790/66 to NAVAIRTECHDATAENGSRVCOM and the FST with information copies as appropriate. Transmission via SALTS is acceptable. For JDAM, message should be sent to NAVAIRWARCENWPNDIV PT MUGU code 311200E and ACC YU EGLIN AFB FL/YU/YUP//.

NOTE

For JDAM NAVAIRTECHDATAENGSRVCOM is not an action or info addressee for either CAT I or CAT II TPDRs.

4.6.24.4.1 A report control number will be assigned to each NAMDRP report. See paragraph 4.6.13.2.

NOTE

TPDRs and combined reports prepared as a result of an aircraft mishap are not privileged. Exercise extreme care to ensure that these reports and requests do not contain privileged information.

4.6.24.4.2 Action. Submit a Category I TPDR priority message at the discovery of a deficiency. The action addressee for the message report shall include the equipments FST, if known, and NAVAIRTECHDATAENGSRVCOM.

4.6.24.5 Response to TPDR Reports. The FST or cognizant screening point is required to respond to all NAMDRP reports. When a reply has not been received within 20 working days, the originating activity will initiate follow-up action to the FST or screening point by message or other means as appropriate.

4.6.24.5.1 NAVAIRTECHDATAENGSRVCOM will serve as the central manager and screening point for all COMNAVAIRSYSCOM technical publications and shall:

- a. Maintain a record of all technical manual deficiencies.
- b. Acknowledge receipt of each TPDR to the originator and assign FST action for TPDRs as required.
- c. Coordinate action with the FST and contractor to ensure correction of technical publications.
- d. Follow-up on each TPDR to ensure that corrective action is accomplished.
- e. Provide TPDR status as required to the aircraft controlling custodian, type commander, and originator.

4.6.24.5.2 FST will perform the following:

- a. Coordinate with NAVAIRTECHDATAENGSRVCOM and take the appropriate action necessary to ensure that the deficiency is resolved, for example, correctness of the technical publication, appropriate printing assignment, or preparation and initiation of change for corrective action.
- b. Notify NAVAIRTECHDATAENGSRVCOM and the TPDR originator of final disposition of each TPDR. FST shall also ensure that all addressees of the original report are included in all correspondence.

4.6.25 Category I TPDR Message Preparation. The following instructions and examples apply to Category I TPDR message reports. Examples of TPDR message entries are defined in bold type; for an example of a completed Category I TPDR message format, refer to figure 4-6-8.

NOTE

Use of "MINIMIZE CONSIDERED" shall be in accordance with NTP-3 (NOTAL).

- a. Precedence: ROUTINE.
- b. From/To Blocks. Complete the blocks as indicated below:

FM	USS MIDWAY//
TO	NAVAIRTECHDATAENGSRVCOM SAN DIEGO CA// (APPLICABLE OFFICE CODE) // NAVAIRWARCENWPNDIV CA//311200E// (APPLICABLE OFFICE CODE) // AAC EGLIN AFB FL//YAL/268L// (FOR AIM-120 MISSILE) ACC YU EGLIN AFB FL//YU/YUP// (FOR JDAM) AIG FOUR TWO THREE// AIG ZERO SEVEN SIX TWO TWO// AIG ONE ONE TWO// AIG SEVEN SIX TWO ZERO// AIG FOUR ZERO TWO//
INFO	COMFAIRWESTPAC ATSUGI JA// (APPLICABLE OFFICE CODE) // COMLATWINGPAC LEMOORE CA// (APPLICABLE OFFICE CODE) // COMFITAEEWINGPAC SAN DIEGO CA// (APPLICABLE OFFICE CODE) // COMMATVAQWINGPAC WHIDBEY ISLAND WA// (APPLICABLE OFFICE CODE) //
BT	
UNCLAS	//N08600//
SUBJ:	CAT I TECHNICAL PUBLICATION DEFICIENCY REPORT
MSGID/GENADMIN/	USS MIDWAY//
REF/A/DOC/	OPNAVINST 8000.16A/1JUNE01//
NARR/REF IS	NAVAL ORDNANCE MAINTENANCE MANAGEMENT PROGRAM//
RMKS/	
1.	USS MIDWAY (CV-41)/03341
2.	NAVAIRWARCENWPNDIV
3.	R03341-88-0005
4.	8187/USS MIDWAY
5.	0801-LP-360-4000
22. A.	NAVAIR 01-AGM88A-2
B.	HARM AGM88A
C.	15 NOV 83
D.	RAC 69 DTD 1 FEB 1983
E.	WP 005 00
F.	8
G.	e
H.	FIGURE 3
I.	THROUGH K. N/A
L.	WP 005 00 PAGE 8 PARAGRAPH E. STATES, "SLIDE ADAPTER HOOK OVER FORKLIFT TINES. POSITION ONE-THIRD THE DISTANCE FROM FORWARD END OF TINES." THIS STATEMENT DOES NOT PROVIDE A WARNING TO SECURE THE ADAPTER HOOK. IF
THE	ADAPTER HOOK SLIPS OFF TINES WHILE MISSILE IS BEING LIFTED, SERIOUS PERSONNEL INJURY COULD OCCUR AND MISSILE SEVERELY DAMAGED.
M.	RECOMMEND THE FOLLOWING WARNING BE INSERTED PRECEDING PARAGRAPH E: "ADAPTER HOOK CLAMPING SCREWS MUST BE PROPERLY SECURED TO PREVENT ADAPTER HOOK FROM SLIPPING OFF TINES."
N.	AOCS JOHNSON WPNS DEPT DEPLOYED.//
DECL/OADR//	(IF MESSAGE IS CLASSIFIED)
BT	

Figure 4-6-8. Sample Category I Technical Publication Deficiency Report Message

TECHNICAL PUBLICATIONS DEFICIENCY REPORT						
NAVAIRTECHDATAENGSRVCOM USE ONLY			a. QA SEQUENCE NO.	b. DATA MANAGER CODE	c. FST/PRIME CODE	
1. REPORTING ACTIVITY			2. REPORT CONTROL NUMBER			
			3. REPORT DATE (YRMODA)	4. WEAPON SYSTEM APPLICATION	5. DISCREPANCY CODE	
6. TECHNICAL MANUAL NUMBER			7. TECH. MAN. DATE		8. CHG. NO. & DATE	9. W/P NO.
10. SEC/PG NO.	11. PARA NO.	12. FIG/TBL NO.	13. CART. NO.	14. CART. DATE	15. FRAME NO.	
16. DEFICIENCY						
<h1 style="margin: 0;">SAMPLE</h1>						
17. RECOMMENDATIONS						
18. IMPACT						
19. MEDIA EVALUATED: <i>(Only one check block is required per item.)</i>						
<input type="checkbox"/> FILM <input type="checkbox"/> PAPER <input type="checkbox"/> PAPER & FILM						
REMARKS						
20. REPORTED BY <i>(Name, rank/rate)</i>			DSN		21. RELEASED BY <i>(Name, rank/rate)</i>	
OPNAV 4790/66 (REV. 5-88)			S/N 0107-LF-002-4400		INSTRUCTIONS ON REVERSE SIDE	

Figure 4-6-9. Technical Publication Deficiency Report (OPNAV 4790/66) (Front)

INSTRUCTIONS	
1. FROM: (Reporting Activity) The Reporting Activity will enter complete mailing address.	8. CHANGE NUMBER AND DATE: This appears directly under the basic date of the manual on which the deficiency is located. Present date in same format as item 3.
2. REPORT CONTROL NUMBER: Enter the Report Control Number (RCN).	9. WORK PACKAGE NUMBER: Enter the number in which the deficiency is located.
3. REPORT DATE: This identifies the year, month, and the day that the report was prepared, and consists of six digits. The date 15 June 1989 would be presented in the following format: 890615. The first two digits indicating the year (89), the second two digits indicate the month (06), and the remaining two digits specify the day (15).	10. SECTION/PAGE NUMBER: Enter the number of the page of the technical manual on which the deficiency is located.
4. WEAPON SYSTEM APPLICATION: Give the specific weapon system against which the deficiency is detected.	11. PARAGRAPH NUMBER: Enter the specific number in which the deficiency is located.
5. DISCREPANCY CODE: This is a numeric code used to describe the type of discrepancy found in the technical publication being reported deficient. A complete list of codes are as follows:	12. FIGURE/TABLE: Enter when an illustration or table is involved in the deficiency.
1. Typographical Errors	13. CARTRIDGE NUMBER: Enter the number being reported deficient.
2. Incorrect Procedures	14. CARTRIDGE DATE: The date shall be presented in the format described in item 3.
3. Schematic Errors	15. FRAME NUMBER: Enter the frame number of the cartridge on which the deficiency is located.
4. Part Number Errors	16. DEFICIENCY: Be very specific. Provide complete information regarding discrepancy, including drawings, schematics, sketches, and references. If necessary, attach copies.
5. SM&R Code Errors	17. RECOMMENDATION: Be very specific. Provide complete information regarding the corrective action required, including drawings, schematics, sketches, and references. If necessary, attach copies.
6. Illustration Errors	18. IMPACT: Enter concise statement of the impact of this discrepancy on work load/operational readiness.
7. Incorrect Values/Tolerances	19. MEDIA EVALUATED: Check applicable block for media that is being reported deficient.
8. Incorrect References	20. REPORTED BY: Give name, rate/rank, and DCN number of person reporting deficiency to ensure receipt by reporter of notification of action taken.
9. Safety (Cautions & Warnings)	21. RELEASED BY: Name, rank/rate, title, and DSN of releasing official.
10. Indexing Problems	
11. Illegible	
12. Print Error (Head to Toe or information cut off)	
13. Missing/Improperly Collated Pages	
14. Film Density	
15. Cartridge Loading (Wrong Film, Cartridge Indexing, No Film, and Inverted Loading)	
16. Other	
6. TECHNICAL MANUAL NUMBER: Give the complete NAVAIR number assigned to the manual being reported as deficient. Only one technical manual should be reported by TPDR.	
7. TECHNICAL MANUAL DATE: This date appears on the bottom right hand corner of the title page. The date shall be presented in the format described in item 3.	
MAIL ORIGINAL AND 1 COPY TO: Commanding Officer, Naval Air Technical Services Facility, Quality Assurance Dept. (40) 700 Robbins Ave., Phila., PA 19111-5097. (PLUS COPY TO Fleet Support Team)	
FOR JDAM SEND ORIGINAL TO: ACC/YUP, 102 West D Avenue, Suite 300, Eglin AFB, FL 32542-6807 Attn: APML. (PLUS COPY TO Fleet Support Team)	
OPNAV/ 4790/66 (REV. 5-88) (BACK)	

Figure 4-6-9. Technical Publication Deficiency Report (OPNAV 4790/66) (Back) (Cont'd)

FM Message Originator//Code//
TO NAVAIRTECHDATAENGSRVCOM
SAN DIEGO CA//Code//
AAC EGLIN AFB FL//YAL/268L//
(If TPDR Involves AIM-120 Missile)
FST//Code//
AIG FOUR TWO THREE//
AIG ZERO SEVEN SIX TWO TWO//
AIG ONE ONE TWO//
AIG SEVEN SIX TWO ZERO//
AIG FOUR TWO ZERO//

NOTE

See OPNAVINST 5102.1C for appropriate AIG.

c. Information Addressee Block. Include the applicable information addressees.

d. Message Security Classification Block. Security classifications are defined in the Department of the Navy Security Classification Guide (OPNAVINST 5513.1E); however, every attempt should be made to employ UNCLAS to expedite routing. When a technical manual is referenced, include the issue date and the latest change date.

e. Subject Block. List the applicable subject or combination of subjects:

SUBJ CAT I TECHNICAL PUBLICATIONS
DEFICIENCY REPORT

f. Reference Block. List the applicable references using an alpha designator starting with "A" as indicated below:

REF/A/DOC/OPNAVINST 8000.16A//1JUNE01//

g. The entries defined below describe technical entries which are required to properly document the deficiency. Each is prefaced by an assigned line number as shown on the following pages.

(1) On line 1, enter the reporting custodian and unit identification code as shown below:

1. USS MIDWAY (CV-41)/03341

(2) On line 2, enter the FST for the failed item as shown below:

2. NAVAIRWARCENWPNDIV

(3) On line 3, enter the report control number as shown below. See paragraph 4.6.13.2 for additional information on the report control number.

3. R03341-88-0005

(4) On line 4, enter the Julian date the deficiency was discovered and the location of the reporting unit as shown below. Omit the location if the entry will cause the message to become classified.

4. 8187-USS MIDWAY

(5) On line 5, enter the NSN of the failed material as shown below:

5. 0801-LP-360-4000

(6) Items 6 through 21 do not apply to TPDRs. Omit these entries from the message.

(7) In block 22, enter pertinent details which provide additional information concerning the publication deficiency.

In block 22A, enter the technical manual number.

In block 22B, enter the system and equipment nomenclature.

In block 22C, enter the basic date of the technical manual.

In block 22D, enter the change date or change number of the publication.

In block 22E, enter the work package number.

In block 22F, enter the page number where the deficiency was discovered.

In block 22G, enter the paragraph number where the deficiency was discovered.

In block 22H, indicate the figure or table number if applicable.

In block 22I, indicate the microfilm cartridge number if applicable.

In block 22J, indicate the microfilm cartridge date.

In block 22K, indicate the frame number of the microfilm cartridge on which the deficiency is located.

In block 22L, provide a specific description of the deficiency.

In block 22M, provide specific recommendations for resolving the deficiency.

In block 22N, enter the point of contact, including name, title, code, and DSN.

4.6.26 Category II TPDR Preparation. Refer to figure 4-6-8 for TPDR OPNAV 4790/66 preparation procedures.

4.6.27 Category I TPDR Response Preparation. The following instructions and examples apply when generating a FST interim or closing response to a Category I TPDR. Examples of message entries are indicated by bold type. Category II TPDR are generally responded to by letter.

NOTE

Use of "MINIMIZE CONSIDERED" shall be in accordance with NTP-3 (NOTAL).

a. Precedence: ROUTINE

b. From/To Blocks. Complete these blocks as indicated below:

**FM FST//Code//
To Report Originator//Code//
AIG FOUR TWO THREE//
AIG ZERO SEVEN SIX TWO TWO//
AIG ONE ONE TWO//
AIG SEVEN SIX TWO ZERO//
AIG FOUR TWO ZERO//**

c. Information Addressee Block. Include the appropriate information addressees. See paragraph 4.6.15c.

d. Message Security Classification Block. Security classifications are defined in the Department of the Navy Security Classification Guidance (OPNAVINST 5513.1E) (NOTAL); however, every attempt should be made to employ UNCLAS to expedite routing.

e. Subject Block. Enter the information listed:

SUBJ INTERIM/FINAL TPDR CATEGORY I RESPONSE

f. List the applicable references using an alpha designator starting with "A" as indicated below:

**REF/A/Originators DTG-RCN//
REF/B/DOC/OPNAVINST 8000.16A/1JUNE01//
REF/C/DOC/Other references as applicable (such as Technical Manual Number)//**

g. The entries defined below respond to the technical entries submitted on the original TPDR. Each is prefaced by an assigned line number as shown on the following page.

(1) On line 1, enter the technical manual title, section, and page.

(2) On line 2, state interim or closing action (e.g., rapid action change in process and will be distributed by (give day-month-year)).

(3) On line 3, enter the point of contact, title, code, and DSN.

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CHAPTER 4.7

Quality Evaluation

4.7.1 General. This chapter sets forth the objectives, policies, and responsibilities for conducting the Airborne Weapons Quality Evaluation Program.

4.7.2 Scope. The provisions of this chapter apply to Navy air launched missiles, ammunition, explosives, and other dangerous articles under the technical cognizance of the Naval Air Systems Command (COMNAVAIRSYSCOM).

4.7.3 Objective. The objective of the Airborne Weapons Quality Evaluation Program is to perform a continuous, unbiased assessment of the Navy in-service airborne weapons stockpile to provide a measure of confidence to responsible commands and activities that these weapons are maintained in a state of readiness prescribed by the Chief of Naval Operations.

4.7.4 Policy. Reliability Centered Maintenance (RCM) is the Navy standard for determining calendar maintenance requirements of weapons. RCM is a disciplined methodology to collect empirical data through stratified sampling of total inventory to predict maximum maintenance periodicity to optimize the inherent reliability of weapons energetics and electronics. In order to achieve these objectives, the Airborne Weapons Quality Evaluation Program will provide assessment in the following specific areas:

- a. Reliability, Maintainability, Availability, and Quality (RMA&Q) Analysis.
- b. Inventory assessment testing.
- c. Rework assessment testing.
- d. Performance evaluation.
- e. Test systems certification.
- f. Warranty analysis.

4.7.5 Reliability, Maintainability, Availability, and Quality Analysis. RMA&Q assessment of each airborne weapons system will be conducted during the operational phase of its life cycle in order to:

- a. Determine effects of storage or deployment conditions on service life.
- b. Determine high failure rate items in units of certain years of manufacture or contract numbers.
- c. Detect any recurring failures in replacement components.
- d. Evaluate test system performance to prevent rejection of good weapons or acceptance of bad weapons because of false test results.
- e. Identify unserviceable items which are returned by the depot with no failure evident without a determination of the conflicting test results.
- f. Determine failure trends and patterns or any special problems revealed by examination of data.

4.7.6 Inventory Assessment

4.7.6.1 An inventory assessment program monitors the status of the airborne weapons stockpile to assure that the weapons and spare components are maintained in the state of readiness specified. The assessment program primarily used analysis of production, maintenance and performance data to determine inventory status for each specific weapon type. Data analysis is supplemented by weapons stations scheduled end item testing and random sample tests of weapons from active inventory. Test results are analyzed to provide:

- a. Assessment of item quality and reliability.
- b. Problems.
- c. Trends.
- d. Cause and effect of failure.
- e. Service life or serviceable in-service time recommendation.
- f. Basis for corrective action.

4.7.6.2 If, during the course of an assessment, a condition is discovered which indicates that the component has be

come unexpectedly unsafe or unreliable, a quality evaluation quick action report will be submitted within 48 hours after discovery and will include details of the deficiency. If a condition is discovered that could lead to unsatisfactory performance or subsequent failure, record the factors involved in the deficiency and perform a quick response engineering investigation.

4.7.6.3 The Quality Evaluation Executive Steering Panel (QEESP) program manager shall brief execution year QEP compliance and out year funding profile of individual programs at the annual NOMMP Policy Committee meeting. The NOMMP Policy Committee shall advise CNO (N781) on continued CNO approval for RCM SIST when RCM/QEP surveillance within a program is not adequate to ensure reliability and confidence of the weapon.

4.7.7 Rework Assessment Testing. The objective of the rework assessment program is to implement reliability-centered maintenance engineering. Effort is focused on verifying the adequacy and effectiveness of depot rework procedures and tests. Where appropriate, procedures are simplified and unnecessary operations eliminated. The rework assessment program provides for:

- a. Assessment of data from the depot.
- b. Analysis of rejected assets from naval weapons stations.
- c. Correlation and analysis of data from all sources to identify significant problem areas in terms of safety, asset readiness performance, and availability.

4.7.8 Performance Evaluation. The Airborne Weapons Performance Evaluation and Reporting Program provides firing histories, success rates, incident rates, kill probabilities and mean time between failure rates. For missiles, the program is supported by Missile Assist Teams. Conventional ordnance is supported by Conventional Ordnance Performance Evaluation teams. This quality evaluation supporting program is explained further in Volume I section 3. Performance evaluation of airborne special weapons is maintained through the Quality Assurance Service Test and Special Weapons Retardation Device Test Program.

4.7.9 Test Systems Certification. Test systems certification is the examination and attestation that a given weapons test system is able to perform in accordance with pre-established criteria. Should corrective action be necessary prior to attestation, recommendations for resolution will be submitted to COMNAVAIRSYSCOM.

4.7.10 Warranty Analysis. To effectively implement airborne weapons warranties, it is necessary to collect, manage, disseminate and analyze certain warranty data in a timely manner. The specific data types and data elements required to accomplish this task vary with each weapon. COMNAVAIRSYSCOM (AIR-3.1.1) is responsible for warranty analysis and implementation.

4.7.11 Quality Evaluation Program Responsibilities

4.7.11.1 COMNAVAIRSYSCOM (AIR-3.1.1) will provide overall management of the Airborne Weapons Quality Evaluation Program and is assigned the following additional responsibilities.

- a. Assign programs to the quality evaluation activities.
- b. Review and approve all quality evaluation master program plans, including test and sampling procedures and all changes thereto for COMNAVAIRSYSCOM weapons items.
- c. Provide test samples to the test activities in accordance with approved plans.
- d. Provide technical information and guidance for COMNAVAIRSYSCOM weapons items.
- e. Conduct appropriate audits of activities performing quality evaluation work.
- f. Review for concurrence changes to NAVSEASYS-COM directives when COMNAVAIRSYSCOM material is affected.
- g. Establish reporting schedules and distribution list for COMNAVAIRSYSCOM items.
- h. Advise the participating quality evaluation activity of COMNAVAIRSYSCOM ordnance, weapons systems to be phased-in or phase-out at least one fiscal year prior to phase-in or phase-out.
- i. Coordinate quality evaluation plans, material requirements, and availability with cognizant Navy, Joint Services and Foreign Military Sales project and functional managers, and with appropriate integrated logistics support management teams.
- j. Assign program responsibilities to quality evaluation activities for emerging airborne weapons systems and components consistent with the maintenance production assignment to the host ordnance activity. That will facilitate

providing engineering support when needed to maintenance production. Commodity class assignments to lead and participating quality evaluation activities for air launched missiles and components. Specific missile assignments appear in the individual weapons maintenance function tables in volume II, section 1, volume II, section 2 assigns airborne ordnance and ammunition maintenance actions.

4.7.11.2 The NAVSEASYS COM will administer and coordinate quality evaluation (QE) work assigned to QE activities to assure timely accomplishment of COMNAVAIRSYS COM tasks. Specific responsibilities are assigned below:

a. COMNAVAIRSYS COM will prepare necessary directives to assure that each airborne weapons item is assigned to a cognizant QE activity.

b. The QE activity will perform COMNAVAIRSYS COM QE work under existing cognizant QE activity directives in conjunction with COMNAVAIRSYS COM tasks.

c. COMNAVAIRSYS COM will assure that airborne weapons quality evaluation at cognizant quality evaluation activities is accomplished in accordance with a jointly approved schedule. The QE activity will coordinate with COMNAVAIRSYS COM any changes to published schedules.

d. QE activities will provide COMNAVAIRSYS COM with necessary budget information to assure personnel, facilities, and equipment are properly supported.

e. When audits of QE activities performing COMNAVAIRSYS COM airborne weapons QE work are planned, the activity will notify COMNAVAIRSYS COM so that appropriate technical representation can be provided for quality audits of those portions of the activity supporting COMNAVAIRSYS COM QE programs.

f. The cognizant QE activity, in conjunction with COMNAVAIRSYS COM, will prepare and submit for COMNAVAIRSYS COM review and approval, proposed weapons QE plans for new COMNAVAIRSYS COM ordnance, weapons, and components.

g. The QE activity will notify COMNAVAIRSYS COM of all changes to activity directives that affect COMNAVAIRSYS COM QE programs.

h. The QE activity will comply with reporting schedules and distribution lists prepared by COMNAVAIRSYS COM for COMNAVAIRSYS COM items.

i. The QE activity will notify COMNAVAIRSYS COM a minimum of one 1 fiscal year prior to action when COMNAVAIRSYS COM work must be phased out because of personnel or space limitations beyond the activities control.

4.7.11.3 Naval Supply Systems Command. The Naval Supply Systems Command will support the Airborne Weapons Quality Evaluation Program through the cognizant program support inventory control point.

4.7.11.4 The lead quality evaluation activity will prepare a quality evaluation master program plan for COMNAVAIRSYS COM review and approval for assigned missile systems and components and is assigned the following additional responsibilities:

a. Prepare and maintain a quality evaluation processing guide for assigned missile systems and components.

b. Monitor the progress of assigned quality evaluation programs. Summarize and relate component test data as appropriate to weapon round reliability level and service life. Determine trends and problems and submit recommendations regarding remedial action.

c. Prepare and verify adequacy and accuracy of quality evaluation inspection and test procedures (including destruction test) and test specifications for assigned systems and components.

d. Stratify the stockpile, establish evaluation periodically, and sample the size. Select samples and submit budget requirements to COMNAVAIRSYS COM and the cognizant program support inventory control point.

e. Perform or monitor inspections and tests to establish quality, reliability, and readiness of systems, components, and spares. Perform failure analysis as appropriate.

f. Establish trend summaries for material service life and serviceable in-service time in stored and operational environments.

g. Summarize all failures and problem areas and provide conclusions regarding recommendations for corrective action.

h. Compile and consolidate participating quality evaluation activity test data.

i. Collaborate in the preparation of a certification plan and coordinate with the designated test system certifying activity during the correlation and certification of applicable test systems used in the quality evaluation program.

j. Control configuration of cognizant unique test systems used in assigned quality evaluation programs.

4.7.11.5 The participating quality evaluation activity will requisition samples, perform quality evaluation tests, and forward data to lead quality evaluation activity. Promptly advise the cognizant lead quality evaluation activity of any significant problems requiring attention. Perform failure analysis as appropriate in addition to the following responsibilities:

a. Transfer test samples to appropriate maintenance or storage activities for disposition after completion of tests and analysis assuring coordination with the lead quality evaluation activity.

b. Provide assistance as required to the cognizant lead quality evaluation activity in the conduct of special tests and investigations.

c. Keep local test system maintenance and configuration records under the configuration control of the lead quality evaluation activity.

d. Maintain equipment correlation and certification through the COMNAVAIRSYSCOM-designated certifying activity.

e. Provide engineering and technical assistance in the resolution of problems related to maintenance production tasks being performed by the parent and host activity.

f. Prepare and submit budgets.

4.7.11.6 The Fleet Support Team (FST) will coordinate with COMNAVAIRSYSCOM (AIR-3.1.1) and take corrective action on problems detected as a result of the quality evaluation program.

a. Carry out Airborne Weapons Corrective Action Program responsibilities defined in volume I, chapter 4.6 of this instruction.

b. Carry out assigned responsibilities for the Engineering Investigation Program defined in volume I, chapter 4.6 of this instruction.

c. Comply with the engineering cognizance assignments (see volume I figure 4-6-1 Fleet Support Teams (FST)).

4.7.11.7 The weapons test systems certifying activity will evaluate airborne weapons test systems as prescribed in NAVAIRINST 5400.67B (NOTAL), including the establishment of acceptable correlation among similar test systems in addition to the following specific responsibilities:

a. Certify in writing that a weapons test system is capable, at the time of certification demonstration, of correctly addressing the quality of the items to be tested.

b. Comply with the certifying activity assignment published in NAVAIRINST 5400.67B (NOTAL), Naval Warfare Assessment Station, Corona, CA, being so designated unless otherwise directed by COMNAVAIRSYSCOM.

4.7.11.8 The data collection agency will collect, store, and provide data upon request from COMNAVAIRSYSCOM and cognizant quality evaluation activities in support of the air launched missile quality evaluation program. The data collection agency is assigned to the Airborne Weapons and Systems Support Department, Yorktown, VA for air launched missile material.

4.7.12 Funding and Manpower

4.7.12.1 COMNAVAIRSYSCOM will provide funding directly to both the lead and participating quality evaluation activities to support the quality evaluation work it assigns.

4.7.12.2 COMNAVAIRSYSCOM will provide funding to the quality evaluation activities for test equipment as follows:

a. As necessary, a proportionate share of general purpose test equipment.

b. All QE activity special purpose test equipment peculiar to COMNAVAIRSYSCOM work.

c. As a part of the normal budget process, NAVSEASYSYSCOM will determine the general purpose test equipment requirements of each quality evaluation activity and will inform COMNAVAIRSYSCOM of funds required for the COMNAVAIRSYSCOM proportionate share.

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CHAPTER 4.8

Technical Data

4.8.1 General. Technical data are recorded information used to define a design and to produce, support, maintain, or operate items of defense material. The data may be recorded in written or picture form. When recorded, technical data becomes technical documentation. The methods used to record data for technical documentation are CD Rom, computers, publications, printouts, tapes, and manuals. Technical data is presented in varied forms. Data available to fleet and weapons maintenance activities fall into four categories: technical manuals, technical directives, engineering drawings, and logistics documentation.

4.8.2 Technical Manuals. The technical manual is the primary tool that joins all elements of logistic support necessary for the operation and maintenance of airborne weapons. Technological advancements in airborne weapons, especially air launched missiles, have changed the approach to writing technical manuals. The specific air launched missile maintenance actions require that the maintenance technician has the technical information readily available to him/her. To make the manual more user oriented, the Naval Air Systems Command (COMNAVAIRSYSCOM) has directed that airborne weapons technical manuals be work package formatted. The work package manual is considered an improvement over the conventionally formatted technical manuals for three reasons. They are:

a. **Organization.** Each work package manual is composed of separate work packages, compiled according to functional tasks, e.g., disassembly, test, assembly, etc.

b. **Comprehensibility.** The comprehensibility assurance criteria was developed for the work package manual by making it easier for the reader to understand.

c. **Forms.** Work package technical manuals include forms presenting applicable checklists, inspection lists, and maintenance requirements lists for each work package. To support the work package format policy, COMNAVAIRSYSCOM has instituted a management program that ensures technical manual in-process reviews, validation, and verification. Airborne weapons technical manual updates are accomplished by revisions, changes, rapid action changes, and interim manual change releases.

4.8.3 Technical Directives. The technical directive system is the authorized medium for directing the accomplishment and recording of modifications and one-time inspections of COMNAVAIRSYSCOM accepted airborne weapons, support equipment and other associated equipment. "Technical directive" is a collective term which includes four types of technical issuances. They are:

a. **Change.** A change directs the accomplishment and recording of a configuration change, that is, material change, a repositioning, a modification, or an alteration in the characteristics of the air launched missile section or component.

b. **Interim Change.** Urgency sometimes dictates dissemination of a technical directive by message. The messages are designated an interim change. Interim changes do not replace the requirement for a formal change.

c. **Bulletin.** A bulletin directs a one-time inspection to determine whether a given condition exists and specifies what action is to be taken if the condition is found.

d. **Rapid Action Minor Engineering Change (RAMEC).** A RAMEC technical directive directs the accomplishment and recording of a configuration change within the limitations of the Rapid Action Minor Change Program in accordance with NAVAIR 00-25-300.

4.8.3.1 In the case of JDAM, under acquisition reform, Time Compliance Technical Orders (TCTOs)/Technical Directives (TDs) will be issued using the Air Force system for numbering and tracking.

4.8.4 Engineering Drawings. Engineering drawings and associated data are developed as directed by COMNAVAIRSYSCOM. They are procured and issued to support the detailed maintenance and repair of air launched missiles and support equipment. The primary purposes of engineering drawings are for procurement and to provide for depot level maintenance.

4.8.5 Integrated Logistics Support Plans. Integrated Logistics Support Plans contain a composite of all support planning along with the considerations necessary to assure the effective and economical support of systems and equip-

ment for their life cycle. The Integrated Logistics Support Plan is used as a tool to acquire logistic support for a specific system or equipment.

4.8.6 Operational Logistics Support Plans. Operational Logistics Support Plans contain information and guidance for using and supporting activities to establish the logistic support of a system or equipment prior to the introduction to the fleet.

4.8.7 Technical Data Management and Distribution Responsibilities

4.8.7.1 It is COMNAVAIRSYSCOM policy that all systems or equipment procured, developed, or intended for use by COMNAVAIRSYSCOM will include contractual requirements for accurate, comprehensible, and usable technical manuals suited to the intended user and matched to their environment and related integrated logistic support function. The policy provides for preparation of technical manuals which follow the approved maintenance plan and provisioning documentation for the end item covered.

4.8.7.2 The Fleet Support Team (FST) is the naval activity having prime engineering cognizance over the weapon system or equipment for which a technical manual is being prepared. Technical manual assignments are made in accordance with engineering FST assignments. As members of the technical manual management team and the integrated logistics support management team, the FST is active in defining requirements in the technical manual contract and participates in the guidance review, quality planning review, quality program review, in-process and adequacy review, verification, and verification follow-up reviews. They also develop and update manuals for out-of-production systems and screen all reported technical manual deficiencies and assign corrective action. (See chapter 4.6 for quality deficiency reporting procedures.)

4.8.7.3 The Naval Air Technical Data and Engineering Services Command (NAVAIRTECHDATAENGSEVCOM) is a COMNAVAIRSYSCOM activity responsible for implementing policy and managing and coordinating the COMNAVAIRSYSCOM technical manual program. NAVAIRTECHDATAENGSEVCOM is responsible for procurement, distribution, and update of technical manuals. Primary management responsibilities include conducting product and procedure reviews, such as quality program reviews, in-process reviews, adequacy reviews, commercial manual reviews, and verification. NAVAIRTECHDATAENGSEVCOM ensures the management of all phases of technical documentation, including review and approval of contractor recommended selections and plans, specification interpretations and recommended deviations, and the

implementation of the quality assurance functions as defined in the Technical Manual Quality Assurance Program Guide. In the case of JDAM, under reform, NAVAIRTECHDATAENGSEVCOM will not be responsible for procurement, distribution, or update of technical manuals. This responsibility will be the prime contractor or Joint Program Office (JPO) at Eglin Air Force Base.

4.8.7.4 The Naval Air Warfare Center Weapons Division, Point Mugu is the central repository for airborne weapons engineering drawings. The Naval Air Warfare Center Aircraft Division, Indianapolis, is the central repository for chaff countermeasures and active expendable decoys engineering drawings. The Naval Surface Warfare Center Division, Crane, is the central repository for infrared decoy flare engineering drawings.

4.8.8 Procedures for Reporting Technical Manual Deficiencies. Technical manual deficiencies are reported through the technical publication deficiency reporting program, which is discussed in chapter 4.6.

4.8.9 Industrial Standards Program. The Industrial Standards Program has been established within COMNAVAIRSYSCOM to manage the development, monitoring, and update of labor, material, and facility standards required to ensure that maintenance production operations provide effective maintenance support at the least cost. The Industrial Standards Program includes the following elements:

- a. Industrial Processing Guide and Fixed Price Matrix development and update. See volume II paragraph 1.4.2.1.
- b. Industrial Processing Standards Monitoring and Analysis. On a continuing basis, the Naval Air Warfare Center Weapons Division, Point Mugu analyzes naval weapons station production results for compliance with Industrial Processing Guide standards.
- c. Logistics Review. Chapter 4.2 provides information on integrated logistics support and logistics support analysis.
- d. Hazardous Materials Control and Management (HMC&M) Program. This program implements OPNAVINST 5090.1B as it relates to the maintenance of airborne weapons and associated equipment. Technical Manual NAVAIR 01-1A-75 (Airborne Weapons and Associated Equipment, Consumable Material Applications and Hazardous Material Authorized Use List) (NOTAL) is the primary controlling document. This manual contains instructions and requirements necessary for the determination and effective use of corrosion control/prevention

materials and procedures, as well as all other hazardous materials. To minimize the variety and quantity of hazardous materials required in the maintenance of assigned commodities, the processes and materials specified in NAVAIR 01-1A-75 take precedence over those in commodity unique manuals. The materials authorized in NAVAIR 01-1A-75 constitute the hazardous material Authorized Use List for maintenance of applicable systems. Adherence to the materials in the Authorized Use List will:

1. Preclude procurement and use of ozone depleting substances.
2. Preclude procurement and use of materials that are not in compliance with environmental regulations.
3. Reduce procurement and use of carcinogenic materials.
4. Reduce the variety and quantity of hazardous materials procured, stored, and disposed of in any one airborne weapons maintenance area. NAVAIR 01-1A-75 is intended to be used during maintenance of all commodities listed in paragraph 1.2.7.2 except targets QF-4N and QF-86F. As commodity maintenance manuals are reviewed for compliance, they are listed in NAVAIR 01-1A-75, table 5, WP 002 00. Using hazardous materials and procedures from a maintenance manual that is not listed in NAVAIR 01-1A-75 puts the maintenance activity and the maintenance personnel at a much greater risk of violating environmental regulations.

e. Consumable Materials Standardization Program. The standardization of consumable materials used to maintain conventional weapons, air-launched missiles, containers and launchers is established policy. The objectives of this standardization program are to reduce the number of consumable materials required by maintenance activities and to reduce the unnecessary procurement and stocking of proprietary items and potentially hazardous/toxic materials. The implementing document is NAVAIR 01-1A-75. Although use of the non-hazardous materials listed in NAVAIR 01-1A-75 is not mandated, adherence to those materials will reduce the variety and quantity of materials procured and stored in any one airborne weapons maintenance area.

f. Depot Rework Specification Implementation. End items undergoing depot repair are standardized and depot rework specifications are prepared.

g. Consolidated Facilities Management Planning Document for Air Launched Missiles and Containers.

This document contains facility development standards, maintenance and testing facility production analysis, and an overview of existing future air launched weapons and container maintenance facilities.

SECTION 5

Management Information Systems

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CHAPTER 5.1

Introduction

5.1.1 General. The Airborne Weapons Information System (AWIS) supports the maintenance management of airborne weapons and their support equipment. AWIS is the information network subsystem of the Naval Aviation Logistics Data Analysis (NALDA) Upline Information System. It supports the basic maintenance doctrine for airborne weapons and their support equipment as prescribed by the Naval Ordnance Maintenance Management Program (NOMMP). It will maximize the utilization and management of required information resources of existing and planned capabilities of the various airborne weapon information systems. It will do this by consolidating these systems into a distributed data base network within the NALDA system. AWIS will also incorporate the existing and planned extension of NALDA/SPLICENET initiatives as a part of its telecommunication network.

5.1.2 Purpose and Scope

5.1.2.1 Purpose. The purpose of this section is to describe the AWIS and provide an overview of the management information data collection, reporting, and analysis process. It provides a familiarization with the AWIS in terms of source data, data flow, analysis processing, output reports, and interfaces with other automated systems. This section provides guidance and instructions for the activities involved with originating, processing, and analyzing airborne weapons' performance and equipment maintenance data. Finally, it presents an overview of the information systems that will network the AWIS to provide required maintenance management data.

5.1.2.2 Scope. This section is divided into five chapters. Chapter 5.1 introduces the major management information systems. Chapter 5.2 addresses the Airborne Weapons Information System (AWIS). Chapter 5.3 describes the Deficiency Reporting Log (DRLOG) and Airborne Weapons Corrective Action Program (AWCAP). Chapter 5.4 contains information concerning the Airborne Weapons Analysis and Reporting System (AWARS). Chapter 5.5 details the Configuration and Data Management Support System.

5.1.3 NALDA Description and Management Structure

5.1.3.1 NALDA Description. The Director, Air Warfare Division (CNO (N78)) functional sponsor plan for aviation logistics information designates the NALDA system as the naval aviation's upline logistics support and analysis data system. Early plans have been growing from a group of separately developed data based systems to its present form. As NALDA is developed and as other currently autonomous systems are consolidated into it, NALDA will provide the following four capabilities:

- a. Serve as a central aviation maintenance and logistics experience data warehouse.
- b. Standardize procedures and analysis techniques.
- c. Increase aviation hardware, software, and firmware configuration management and tracking capabilities.
- d. Provide standardized, aviation-wide management information system support.

5.1.3.2 NALDA Management Structure. The NALDA program was established by the Naval Air Systems Command (COMNAVAIRSYSCOM) (AIR-3.6) and is sponsored by the Chief of Naval Operations (N781C8). COMNAVAIRSYSCOM Information Systems Branch (AIR-3.6.1.3) is responsible for identifying and managing interfaces between the major aviation logistics information systems, including the Naval Aviation Logistics Command Management Information System (fleet level), the Naval Aviation Depot Information System (depot level), and IDE/NALDA (upline). Functional management relationships for the development of NALDA into the single, central, upline information system are displayed in figure 5-1-1. Detailed responsibilities, procedures, and interrelationships are fully described for accomplishing the consolidation of independent information systems within NALDA, and interfacing with other major information systems are contained in the NALDA

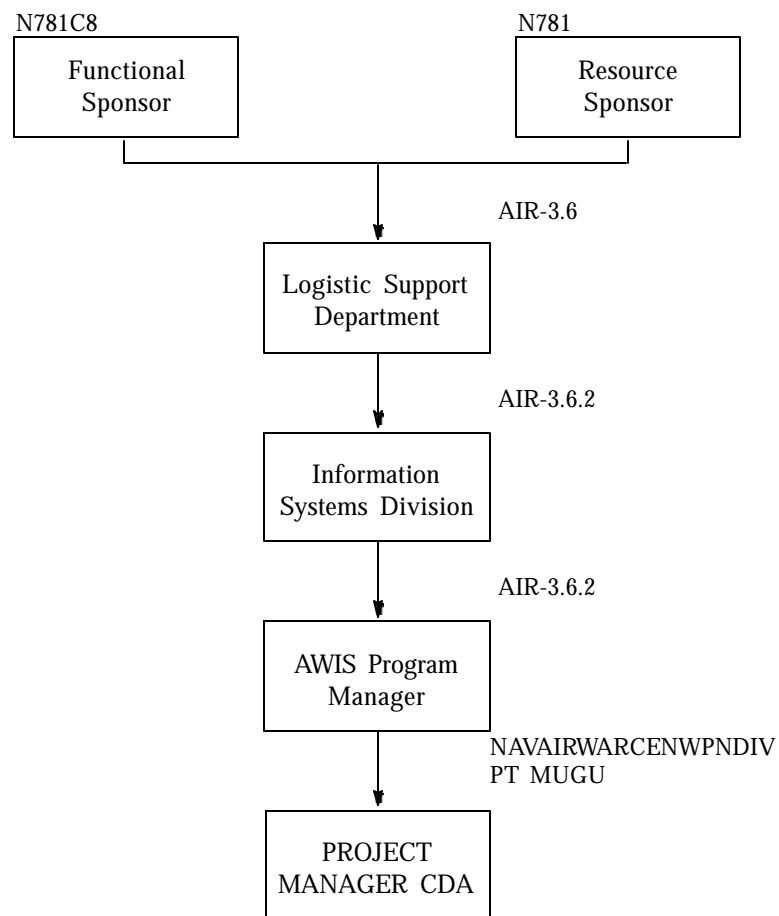


Figure 5-1-1. Upline Information Systems Functional Organization

Functional Management Manual and the NALDA Quality Assurance Plan. Detailed procedures governing actions of the NALDA configuration control board are contained in the NALDA Quality Assurance Plan.

5.1.4 AWIS Description and Structure

5.1.4.1 AWIS Structure. The AWIS is the single information system for upline reporting and analysis of all airborne weapons data and information as mandated by the Department of the Navy Information Systems Plan. AWIS is NALDA's distributed network subsystem. As a distributed network, AWIS links individual data and information systems located at member field activities. It does this within defined procedures and provides access to agreed upon data and information products that are stored and maintained at those activities. AWIS does not itself store or duplicate any available products. However, AWIS does provide a standardized mechanism for transparently accessing needed products and for realizing data and information efficiencies throughout the airborne weapons community. Figure 5-1-2 illustrates the structure of the AWIS. The functional components of the AWIS consolidate the following information systems:

a. The Airborne Weapons Analysis and Reporting System provides for the collection, processing, analysis, reporting, and modeling of performance, maintenance, logistics, and acquisition data.

b. Deficiency Reporting Log (DRLOG). The data base is utilized for failure, repair, and trend analysis on hardware problems performance deficiencies, and corrective actions throughout the life cycle of the weapons. This data base is used for the output of the Airborne Weapons Corrective Action Program (AWCAP).

c. The Configuration and Data Management Support System (CADMSS) was conceptually approved by the Chief of Naval Material in May 1977, and provides an information system used for managing engineering documentation, configuration baselines and for maintaining a history of engineering changes and contract data deliverables.

5.1.4.2 AWIS Support of Acquisition and Production Support and Integrated Logistics Support. As depicted in figure 5-1-2, the AWIS architecture consists

of consolidating information systems supporting the acquisition and production support and the integrated logistics support functional requirements tasked to the Naval Air Warfare Center Weapons Division, Point Mugu by COMNAVAIRSYSCOM (AIR-3.1.1). Acquisition and production support was developed to satisfy the in-service engineering, configuration, data management, and production support information system requirements in response to the cognizant field activity program established and issued by NAVAIRINST 5400.14C (NOTAL). Integrated logistics support was developed to satisfy the logistics requirements of OPNAVINST 5000.42D (NOTAL). Currently, both the acquisition and production support and the integrated logistics support systems operate independently. The systems interface consists of standard hard copy report distribution.

5.1.4.3 AWIS Assessments of In-service Airborne Weapons

a. The structure and mission of the AWIS allow for a continuous evaluation of the in-service stockpile of airborne weapons systems. The AWIS assesses system Reliability, Maintainability, Availability, and Quality (RMA&Q) in the following specific areas:

- (1) Quality evaluation laboratory test program.
- (2) RMA&Q analysis and reporting program.
- (3) Rework assessment test program.
- (4) Warranty analysis and reporting program.
- (5) Flight performance and evaluation program.

b. The RMA&Q analysis and reporting program networks data within AWIS to produce a five-tiered information reporting system:

- (1) Management digest matrix.
- (2) Executive summary.
- (3) Type and model summary.
- (4) Missile system summary.
- (5) Analytical and engineering reports.

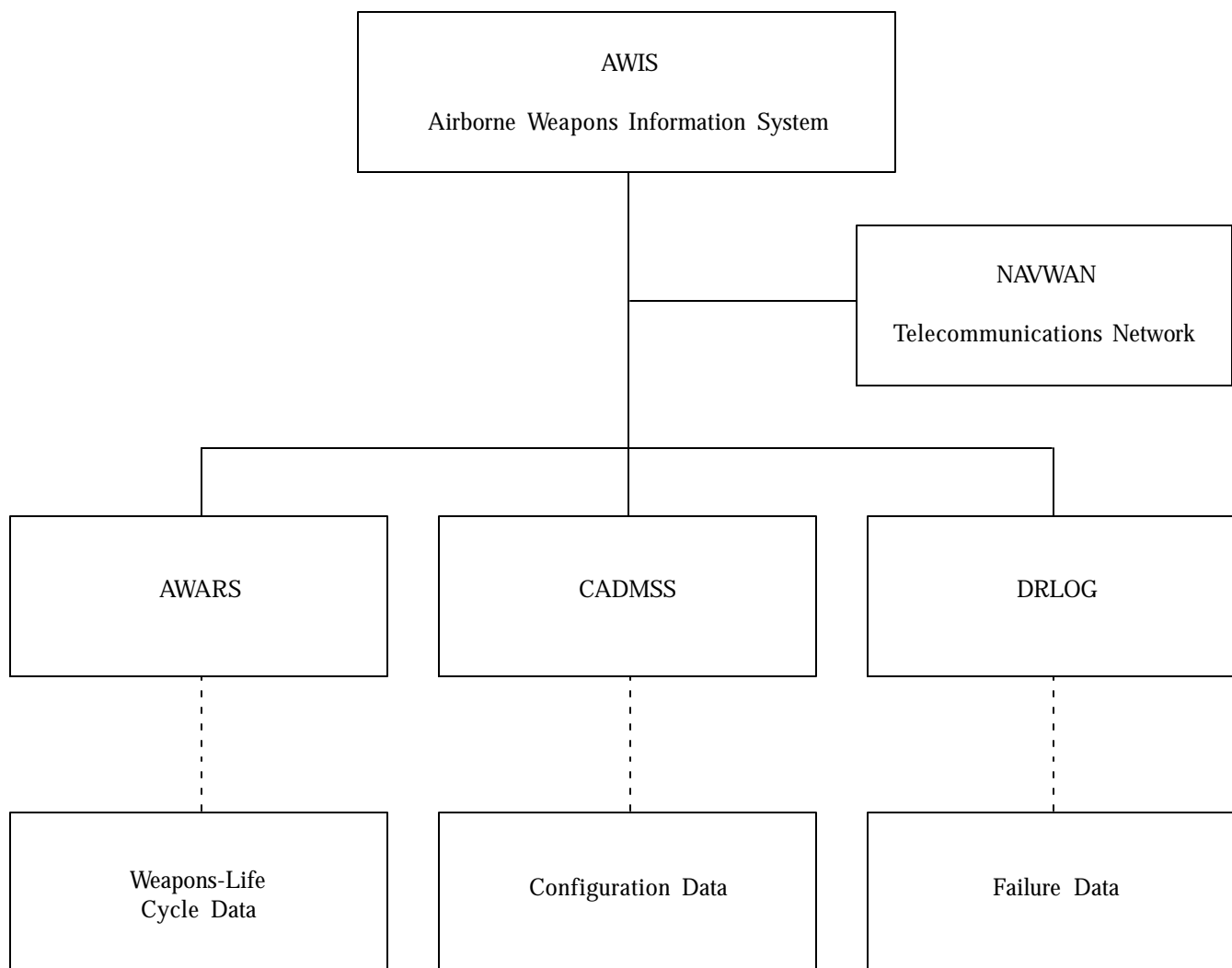


Figure 5-1-2. Airborne Weapons Information System Architecture

5.1.5 Interfacing Systems. There are a number of systems that interface with AWIS in support of airborne weapons maintenance. The following is a list of the most significant interfacing systems.

a. **Naval Aviation Maintenance and Material Management (AV-3M) System** The AV-3M system is a subsystem of the Navy's 3M program. It provides the Navy, to the maximum extent possible, with a standardized set of procedures to simplify managing, recording, accumulating, storing, retrieving, analyzing, and reporting data concerning fleet maintenance and its related material. For airborne weapons, this is primarily concerned with aircraft items, such as guns, launchers, and their related support equipment. AV-3M also provides procedures for training personnel in its operation and use. Standardization of forms, administrative paperwork, reports, and control documents have made planned maintenance and material management less time consuming and demanding at all echelons of naval command, from the Chief of Naval Operations (CNO) down to fleet organizational maintenance activities.

b. **Conventional Ammunition Integrated Management System (CAIMS).** CAIMS is an automated Navy conventional ammunition inventory and control information system. CAIMS serves as the only inventory reporting system for conventional ammunition used by CNO. It is also the single point of reference within the Navy for the worldwide status and visibility of the Navy's conventional ammunition data, regardless of inventory management or ownership responsibility. In particular, the data includes requirements, assets, allowances, production and procurement, expenditures, financial, technical, renovation, foreign military sales program, budget, and Serialized Lot Item Tracking (SLIT) information. It provides the capability of tracking individual units by serial number or aggregate units by lot designation using the SLIT subsystem. It is important to note that CAIMS is for conventional ammunition.

c. **Defense Standard Ammunition Computer System (DSACS)** DSACS is a joint services automated data system for conventional ammunition. It will functionally operate to support the single manager for conventional ammunition and the military services in the acquisition, logistics, finance, and management of assigned items of conventional ammunition. The Army is leading the development effort of DSACS.

d. **Joint Engineering Data Management Information and Control System (JEDMICS).** JEDMICS is a Department of Defense system that is designed to fulfill the requirements of the tri-Services for the automation of engineering drawing data for storage and retrieval at engineering data repositories. JEDMICS replaces the manual and semi-automated storage of physical representations of technical data (hardcopy drawings and aperture cards) with storage of digital versions of the data with fully automated retrieval, update, and reproduction in a digital environment.

e. **Naval Aviation Depot Information System (NADIS).** The NADIS is a new information system in its planning stage. Its functional description is being developed by the Naval Aviation Depot Operations Center (NADOC) Patuxent River, MD, in support of NAVAIRSYSCOM who is both the NADIS functional and program manager. NADIS will integrate the information required to support the management of the Naval Aviation Depots.

f. **Naval Aviation Logistics Command Management Information System (NALCOMIS)** NALCOMIS is a developing system. It provides the fleet ship and shore organizational maintenance activity, intermediate maintenance activity, and supply support center activities with a modern, real time, responsive, computer-based management information system. It assists managers in planning and executing their assigned functions in a more efficient and expeditious manner. It assists maintenance and supply management by furnishing current and accurate information needed for decision making. For airborne weapons, NALCOMIS is primarily concerned with installed aircraft items such as guns, launchers, and their related support equipment. Its four primary objectives have major impacts on the mission capability of aircraft and their installed airborne weapons. They also have major impacts on overall personnel effectiveness at the organization and intermediate maintenance levels and the supply support center in support of the Naval Aviation Maintenance Program (NAMP).

g. **Naval Ordnance Management Information System (NOMIS) and Integrated Logistics Support Management Information System (ILSMIS)** NOMIS is designed for the automated stock recording and reporting of ammunition stores at NAVSEASYS COM activities. The near term ILSMIS functional operations are basically those performed by supply department personnel. It provides enhancements to existing NOMIS that can be accomplished rapidly and economically, allowing temporary solutions to top prior-

ity material processing problems of the Navy ordnance activities. Its objective is to provide accurate, timely, and comprehensive reporting of assets and a document and material tracking status through a system that is integrated with NOMIS and other local program management systems

h. Quality Deficiency Evaluation and Analysis System (QDEAS). The QDEAS is a data base system that stores 10 years of data from Category I and II Product Quality Deficiency Reports (PQDR) on new or newly reworked material used in all programs involving naval aircraft, airborne weapons, and associated support equipment. It provides this data deficiency data to the Product Deficiency Reporting and Evaluation Program and the Contractor Evaluation System. QDEAS also stores all deficiency reports under the Naval Aviation Maintenance Deficiency Reporting Program.

i. Standardized Conventional Ammunition Automated Inventory Record (SCAAIR) System. The SCAAIR system is a Navy ammunition management system used to manage and report non-nuclear ordnance to CAIMS and to Marine Ammunition Automated Reporting System (MAARS) via autodin or Defense Automatic Addressing System (DAAS). The SCAAIR is an unclassified, standalone, menu-driven system.

j. Support Equipment Resources Management Information System (SERMIS). SERMIS is a part of the AMMRL Program promulgated by NAVAIRSYS-COM. SERMIS is the replacement for the Application Data for Material Readiness List files of the AMMRL Program and M007 files of the support equipment rework program. It provides the Support Equipment Controlling Authorities (SECA) with on-line visibility of source, allowance, inventory, and rework data to aid in inventory control.

CHAPTER 5.2

Airborne Weapons Information System

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CHAPTER 5.2

Airborne Weapons Information System

5.2.1 General. The proposed NAVAIRINST 5230.16, (NOTAL), will establish policies and procedures for the functional management of the Naval Air Systems Command (COMNAVAIRSYSCOM) Airborne Weapons Information System (AWIS). The Aviation Logistics Information System Functional Sponsor Plan, and the Aviation Logistics Upline Information System. AWIS is the single information system for upline reporting and analysis of airborne weapons and peculiar support equipment data and information, as mandated by the Department of the Navy Information Systems Plan. AWIS is a distributed network of the COMNAVAIRSYSCOM upline information system. The AWIS goal includes the optimization and integration of existing airborne weapons information systems into a single information system capable of responding to airborne weapons managers' needs for acquisition, production, logistics, and performance information. AWIS uses the NAVNET as the communication network. AWIS links individual data and information systems located at member field activities and, within defined procedures, provides access to agreed upon data and information products that are stored and maintained at those activities. AWIS does not itself store or duplicate any available products. AWIS does provide a standardized mechanism for transparently accessing needed products and for realizing data and information efficiencies throughout the airborne weapons community.

5.2.2 Objectives. The objectives of AWIS are to:

- a. Integrate individual airborne weapons data and information systems into a coordinated and accessible network.
- b. Eliminate duplication of effort in building and maintaining source data at multiple activities.
- c. Realize efficiencies in combined telecommunications resources with the NAVNET.
- d. Move toward greater standardization of common data base and applications software to increase compatibility and accessibility of data and information resources.

- e. Facilitate the implementation of Computer-aided Acquisition and Logistics Support goals and standards.

- f. Implement Department of Defense and Navy standards aimed at reducing dependence upon proprietary hardware and software environments and, instead, utilize generic, state-of-the-art, off-the-shelf hardware and software.

5.2.3 Scope. AWIS includes all data and information systems supporting airborne weapons as tasked by COMNAVAIRSYSCOM. AWIS responsibility includes all management and technical issues (such as organization, funding, configuration management, quality, performance, technology, content, and coordination) consistent with COMNAVAIRSYSCOM and higher authority tasking, policy, and requirements. AWIS responsibility does not extend into management, technical, or operational matters internal to any of the member activities.

5.2.4 Organization. Figure 5-1-1 depicts the upline information system functional organization. The functional and resource sponsors for AWIS are within the Office of the Chief of Naval Operations. The AWIS functional manager is the Naval Air Warfare Center Weapons Division, Point Mugu Program requirements and resources are specifically identified by sponsoring COMNAVAIRSYSCOM divisions. AWIS attributes, content requirements, processing standards, common procedures, system quality, and other characteristics are determined by the AWIS Users Group, consisting of all interested COMNAVAIRSYSCOM divisions, member field activities, major system representatives, and other appropriate experts (government and commercial). Voting members comprise the AWIS Executive Committee and include key representatives from sponsoring COMNAVAIRSYSCOM divisions and a key representative from each member field activity. Responsibilities are outlined briefly below and are described in detail in the Aviation Logistics Information System Functional Support Plan.

5.2.4.1 COMNAVAIRSYSCOM Responsibilities. COMNAVAIRSYSCOM is responsible for program management and also designates the project manager for the AWIS system. The Logistics and Maintenance Policy Division is the upline information system functional manager. The Information Systems Management Division performs central information resource planning and data administration for COMNAVAIRSYSCOM and its field activity information systems.

5.2.4.2 Functional and Resource Sponsors. The functional sponsor provides the highest level overview within the Navy to ensure adequate support to assigned weapon systems and mission areas. The resource sponsor coordinates funding requirements that are within identified weapons system appropriations.

5.2.4.3 Project and Functional Manager. The functional manager ensures that AWIS architecture, standards, and procedures are consistent with parent system, COMNAVAIRSYSCOM Upline Information System (NALDA) requirements, and that full compatibility is achieved with required external interfaces. The project manager has primary responsibility for program execution in both management and technical areas. The project manager provides necessary planning, coordination, review, and reporting of AWIS design, development, and operation activities. The project manager is responsible to the resource sponsor and functional sponsor and manager for AWIS adherence to prescribed standards and requirements, and to sponsoring COMNAVAIRSYSCOM divisions for AWIS capabilities and content. The Naval Air Warfare Center Weapons Division, Point Mugu is designated as both the project manager and central design activity for AWIS.

5.2.4.4 Central Design Activity. The AWIS central design activity is located at the Naval Air Warfare Center Weapons Division, Point Mugu. The central design activity is responsible for:

- a. Design, development, implementation, maintenance, and life cycle support of application software.
- b. Identification of new information system requirements and developing information system technical design.
- c. Assisting in functional design and planning, and participating in technical and functional reviews.
- d. Preparation of functional and technical documentation for all application software.

- e. User support.

5.2.4.5 Sponsoring COMNAVAIRSYSCOM Divisions. Sponsoring COMNAVAIRSYSCOM divisions provide specific tasking to identify and develop individual member data system requirements and capabilities as well as tasking to support AWIS development, coordination, and operation. Sponsoring COMNAVAIRSYSCOM divisions perform executive reviews to ensure that weapons system requirements are being adequately addressed by AWIS within appropriate field activity mission areas.

5.2.4.6 Users Group and Executive Committee. The AWIS Users Group and members provide review and approval of system attributes such as content, processing standards, common procedures, and system quality, all consistent with sponsor tasking and Department of Defense and Navy requirements for automated data processing systems.

5.2.4.7 AWIS Application Manager. COMNAVAIRSYSCOM has designated AWIS as the airborne weapons information system to be developed through the evolutionary consolidation of currently independent information systems. As the information systems are integrated into AWIS, network project managers will become AWIS application managers, responsible for adhering to the policies and procedures set out in the basic instruction.

5.2.4.8 Site Managers. AWIS site managers will adhere to guidelines delineated in SECNAVINST 5000.2B (NOTAL), Life Cycle Management Policy and Approval Requirements for Information System Projects.

5.2.4.9 AWIS Users Group. AWIS users are located at COMNAVAIRSYSCOM field activities, and Naval Sea Systems Command sites supporting airborne weapons. The AWIS Users Group is the primary controlling body through which AWIS users determine critical system attributes, such as content requirements, processing standards, common procedures, and system quality.

5.2.5 AWIS Structure. COMNAVAIRSYSCOM has directed that AWIS provide for the continuous evaluation of the in-service stockpile of airborne weapons systems. AWIS provides for the configuration, assessment of system Reliability, Maintainability, Availability, and Quality (RMA&Q) for each airborne weapon.

CHAPTER 5.3

Deficiency Reporting Log

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CHAPTER 5.3

Deficiency Reporting Log

5.3.1 Deficiency Reporting Log. The DRLOG system is an automated system which provides for the storage, analysis, tracking, and report generation for deficiency reports submitted against airborne weapons. The DRLOG system supports the Airborne Weapons Corrective Action Program (AWCAP) involves all aspects of support required to resolve airborne weapons system problems. This support begins with the actual discovery of a deficiency and ends when final solutions, appropriate modifications, or logistics actions have been incorporated. The system sorts the reports by problem type, deficiency report type, and weapons system. It provides support throughout the deficiency investigation and solution cycle of airborne weapons or support equipment. See figure 5-3-1 for an example of a problem report format. The DRLOG provides categorization of deficiency reports for the following weapons systems:

- (1) Propellant Actuated Devices.
- (2) Maintenance concepts and plans.
- (3) Airborne missile launchers.
- (4) Bombs.
- (5) Cartridge actuated devices.
- (6) F-14 software.
- (7) EA-6B software.
- (8) Guns and ammunition.
- (9) Handling and damage.
- (10) HARM.
- (11) HARPOON, SLAM, SLAM-ER.
- (12) Submarine warfare airborne devices.
- (13) Guided bomb units.
- (14) Submarine warfare airborne devices.
- (15) PHOENIX.
- (16) Rockets.
- (17) SIDEWINDER.
- (18) SPARROW.

- (19) TOW.
- (20) WALLEYE.
- (21) Pyrotechnics.
- (22) AMRAAM.
- (23) JSOW.
- (24) HELLFIRE.

5.3.1.1 DRLOG provides further categorization of deficiency reports within the following integrated logistics support:

- (1) Maintenance concepts and plans.
- (2) Supply support.
- (3) Technical data.
- (4) Facilities.
- (5) Support equipment.
- (6) Personnel and training.
- (7) Packaging, handling, storage, and transportation.
- (8) Hardware.
- (9) Software.
- (10) Other.

5.3.1.1.1 DRLOG System Description. The DRLOG contains the following four major subsystems:

a. Data Base Maintenance Subsystem. The Data Base Maintenance Subsystem allows the user to enter deficiency report data by specific problem number and weapons system, and allows the tracking of a deficiency report throughout its life cycle. The Data Base Maintenance Subsystem contains seven functions which provide the following data entry and data base activities.

(1) Problem Initiation. This function provides for loading and maintenance of DRLOG problem data. A problem pertains to one or more deficiency reports and is identified by a problem number which is sequentially assigned by the DRLOG system. DRLOG problem data includes

28 OCT 88	SPARROW III ACTIVE AIRBORNE WEAPONS CORRECTIVE ACTION PROGRAM IN SERVICE				
PROBLEM NO 11224				OPEN	
END ITEM	: SPARROW	AIM-7F	NALC:		
COMPONENT	: UNIT, TELEMETRY AN/DKT-37		TEC:		CMBG
CONF	:		WUC:		542M0
PROB BRIEF	: AN/DKT-37 FAILED DURING FLIGHT				
OCCURRENCE	SOURCE : VF-143	TYPE EMR	DOCUMENT NO. 0004	DATE 22JAN87	DR STATUS OPEN
PROBLEM	:				
ACTION TAKEN	: VF-143	EMR 0004	22JAN87		
<p>VF-143 EMR 0004: Telemetry unit failed 15 minutes into flight. Maintenance personnel discovered a dark brown residue around the guidance and TM sections.</p> <p>VF-143 EMR 0004: 30JAN87: Requested that NAVSTA Roosevelt Roads return the exhibit for repairs in accordance with current instructions. Requested NWS Yorktown, on receipt of exhibit, forward the TM unit to NAWCWPNS, Point Mugu for investigation of battery. 06JUL87: NAWCWPNS, Point Mugu 1032 advised that they have not yet received the exhibit. 20JUL88: Request NAVSTA Roosevelt Roads provide shipment data stating date and method of shipment. Also requested WPNSTA Yorktown provide receipt data and shipment data to NAWCWPNS, Point Mugu. 26JUL88: Phoncon between NAWCWPNS, Point Mugu, S. Wright (Code 2024) and J. Gerving NAWCWPNS, Point Mugu Rep NAVSTA Roosevelt Roads, reflected NAVSTA position of not having record of subject exhibit. NAWCWPNS, Point Mugu is sending all messages to J. Gerving NAWCWPNS, Point Mugu, Rep NAVSTA Roosevelt Roads, for his investigation to where exhibit is and why their records reflect no exhibit.</p>					
PREVENTIVE ACTION	:				
CORRECTIVE ACTION	:				
END ITEM	: NOMENCLATURE SPARROW	PART/DOC. NO.	FSC	NIIN	
COMPONENT	: NOMENCLATURE UNIT, TELEMETRY AN/DKT-37	PART/DOC. NO.			
SERIAL NO.	MXT00285				
CONFIGURATION:	NOMENCLATURE	PART/DOC. NO.			

Figure 5-3-4. Problem Report

identification, description, corrective action data, references, and action items.

(2) Deficiency Report Tracking. This function allows users to monitor the disposition of a specific deficiency report. Deficiency reports are grouped and associated with a DRLOG problem by means of the problem number.

(3) Problem Close Out. The problem close out function allows the user to enter and/or modify all the data to close out a problem. Two data screens allow closure justification and authorization data to be loaded.

(4) Master Reference List. The master reference list function allows for the standardization and categorization of data by deficiency report type, problem type, and weapons system. The master reference list consists of eight functions:

- (a) Weapons systems supported.
- (b) AWCAP volumes.
- (c) Reporting activities.
- (d) Deficiency report types.
- (e) Investigating activities.
- (f) Problem types.
- (g) Problem categories.
- (h) Closure approval activities.

(5) Administration. The administration function allows the DRLOG system administrators to manage the DRLOG data base content. This function consists of four processes:

- (a) Changing problem number status.
- (b) Archiving problems to the history file.
- (c) Retrieving problems from history file.

(d) Permanently deleting the problem from the data base and history tape.

(6) Action Assignment Tasking. The action assignment tasking function allows action assignment data (problem number and assignment) to be selected and displayed.

(7) Closed Problem History. The closed problem history function consists of two screens that display the data from problems that have been closed and archived.

b. Report Generation Subsystem. The Report Generation Subsystem allows the user to generate selected hard copy reports. The report generation subsystem provides the following:

- (1) Problem number report.
- (2) Deficiency report.
- (3) Test plan report.
- (4) Ad hoc reports.
- (5) Problem numbers by weapons system report.
- (6) Problem numbers by problem category report.
- (7) Deficiency reports by weapons system report.
- (8) Deficiency reports by problem category report.
- (9) Deficiency reports by receiving activity report.
- (10) Deficiency report type report.

c. Inquiry Subsystem. The Inquiry Subsystem provides quick on-line summary and cross reference information for key data elements of the DRLOG system. The areas selected for access enable the user to obtain data necessary for further access to the detailed DRLOG data base records. The Inquiry Subsystem provides the following reports:

- (1) Problem numbers by weapons system.
- (2) Problem numbers by component affected.
- (3) Problem numbers by problem symptom/brief.
- (4) Problem numbers by problem cause.

d. Engineering Investigation Tracking Subsystem. This subsystem supports the preparation and approval of engineering and quality investigation test plans related to DRLOG problems. The first provides for loading and maintenance of engineering and quality investigation test plans. The second function allows NAVAIRSYSCOM or the maintenance engineering activity to review and approve each test plan. The components of this process area are:

- (1) Engineering and quality investigation Tracking.
- (2) NAVAIRSYSCOM and/or maintenance engineering activity approval.

CHAPTER 5.4

Airborne Weapons Analysis and Reporting System

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CHAPTER 5.4

Airborne Weapons Analysis and Reporting System

5.4.1 General

a. The Naval Air Systems Command has designated the Naval Air Warfare Center, Weapons Division (NAVAIRWARCENWPNDIV), as the AWARS central repository and as the central data collection point for AWARS weapons information. All data referenced in this effort shall include both domestic and foreign military sales data.

b. The NAVAIRWARCENWPNDIV, has been assigned the lead in AWARS and is responsible for the establishment/maintenance of the central repository for the AWARS database and the development of input/output to the database. All tape electronic media, regardless of data type, is forwarded for uploading into the central repository database.

c. The Weapons Station, (WPNSTA) Yorktown acts as the central collection point for air launched missile maintenance, test and logistics data. Major responsibilities includes the data collection, data entry, validation techniques, utilizing the Pt. Mugu Data Entry System (DES).

d. Performance Data, as collected for AWARS, will continue to be collected by Naval Warfare Assessment Station (NWASTA), Corona, except for HARPOON/SLAM/SLAM ER which will be collected by NAVAIRWARCENWPNDIV Pt. Mugu.

e. AWARS provides the capability for collecting, processing, analyzing, and reporting maintenance, performance, and logistics data. AWARS maintains a life cycle history of serialized all-up-rounds and performs serialized configuration accounting of each all-up-round. Specific functions supported by AWARS include:

(1) Logistics support and maintenance performance assessments.

(2) System Reliability, Maintainability, Availability, and Quality (RMA&Q).

(3) Configuration control.

(4) Maintenance planning and management.

(5) Deficiency report investigation and quality control.

(6) Warranty requirements.

(7) Weapon performance assessment.

f. AWARS is comprised of what was previously termed the Maintenance Data Collection System and its subsystems, the Information Consolidation Service, Performance Monitoring System, Explosive Component Tracking, and Missile Flight Performance Analysis.

5.4.1.1 AMRAAM and JDAM will use the Air Force Reliability, Availability, and Maintainability (RAMs) data base for collection of weapon information.

5.4.2 AWARS System Description

a. AWARS provides information, analysis, and trend reporting of maintenance actions and performance events through the four input and output subsystems described below. It allows the assessment of RMA&Q parameters, maintenance planning technical factors, system performance, supply effectiveness, and warranty implementation considerations. Data pertaining to each complete missile, section, and component, and test equipment are collected, beginning with its development and ending with its final expenditure. AWARS provides periodic standard reports, structured ad hoc reports, on-line information, and data exchange as required to support airborne weapons maintenance programs. The data collected are divided into the following four systems:

(1) Production data.

(2) Maintenance data.

(3) Performance data.

(4) Inventory management data.

5.4.2.1 Production Data. The production data collection begins with the manufacture of a missile all-up-round, section, component, or test equipment. The data is checked to ensure compatibility, and then integrated into the appropriate production data file. The following data is collected from

the manufacturer upon initial production and are provided in accordance with contract data requirements.

a. **As-Built Configuration Data.** The manufacturer of the missile, section, component, or test equipment provides the central data collection agency with the as-built configuration list which lists the individual serialized components installed in the missile, section, or component at the time of acceptance by the Navy.

b. **Factory Test Variables Data.** Variables data contain missile, section, component, and test equipment data which are generated by a series of tests performed on a missile, section, or component by the manufacturer prior to Navy acceptance of the end item.

c. **Factory Acceptance and Shipping Data.** Acceptance and shipping data (DD 250 and/or DD 1149) are provided by the various manufacturers involved in the delivery of missiles, sections, components, or test equipment to the Navy.

d. **Warranty Data.** Warranty data are provided by contractual agreement between the Naval Air Systems Command and the manufacturer of the missile, section, component, or test equipment stating the conditions and terms of the warranty. Warranty data include all data necessary to monitor contractor compliance with warranty requirements.

5.4.2.2 Maintenance Data. Maintenance data are collected for missiles, sections, components, and related test equipment. They are collected at the organizational, intermediate, and organic depot levels of maintenance. These data are intended to provide the Navy and other Government activities with the management and technical information necessary to facilitate and enhance the logistics support of missiles, sections, components, and support equipment. All maintenance data is inputted into the DES at Weapons Station (WPNSTA) Yorktown and WPNSTA Seal Beach Det. Fallbrook via the AWIS data base. Types of maintenance data currently being collected are described below:

a. **Organizational and intermediate level maintenance data** involves receipt, inspection, limited test, and repairs including reconfiguration/remate of weapons, sections, and components. Organizational and Intermediate Level activities are defined in figure 2-3-1.

b. **Depot level maintenance data** involves testing, reconfiguration of missile sections or components, repairs on missiles, sections, components, or test equipment performed by a commercial depot or organic depot. The data is for-

warded to the central data collection agency for processing. Depot level activities are defined in figure 2-3-2.

5.4.2.3 Inventory Management Data. Inventory management data are used to provide information regarding the location and availability of missiles, sections, and components. Inventory management data involves information on missile location, maintenance due date, expiration date, and serviceable in-service time of missiles, sections, and components. The following data involve location and inventory of airborne weapon all-up-rounds, sections, and components:

a. **Transfer Data.** Transfer data are collected during the transfer of a missile or component from one location to another.

b. **Conventional Ammunition Integrated Management System and Serialized Lot Item Tracking System Data.** Conventional Ammunition Integrated Management System and Serialized Lot Item Tracking System data include items such as serial number, lot number, location, type, and quantity of missiles and related components.

c. **Configuration Summary Form Data.** Configuration summary form data are collected on the major sections and components defining the existing configuration of a missile. Current data collection capabilities allow for the reading of bar codes attached to the missile sections.

5.4.2.4 Performance Data. Performance data are collected during military exercises and test flights, and include both captive flight and firing data. These data are critical in providing the Navy with information regarding the effectiveness of airborne weapons. Currently, all performance data are provided in a hardcopy format. Firing and captive flight reports are received, key-entered, validated, and processed onto the master files.

5.4.3 Data Output from AWARS. The data retrieval function of the AWIS allows the user to access all data types from a single computer terminal via the AWARS data base. The user may retrieve the entire history of a missile, section, or component. The output process provides both the reported and analyzed data elements for all output reports. These output reports come in two basic formats: standard data displays which appear on the computer screen and standard data products which are printed in hardcopy format. AWARS has standard data products available that are described in the following paragraphs:

a. The following are the standard reports that are available in GUI AWARS.

(1) Acceptance Detail Report. The Acceptance Detail Report will list most contractual information associated with acceptance data. Acceptance data is usually received by the Government upon receipt of a missile from the manufacture. This report will have each SN on a separate line. For summarized information based on the contract number, use the acceptance report.

(2) Acceptance Summary Report. The Acceptance Summary Report will summarize acceptance data based on the contract and contract line item. Acceptance data is usually received by the Government upon receipt of a missile from the manufacturer. If you need to see how individual S/N's relate to contracts, then use the acceptance detail report.

(3) Captive Carry Detail Report. The Captive Carry Detail Report displays information about a missile when it is captive flown on an aircraft. Every flight of the missile will be listed on a separate line. For the Navy, captive carry data usually shows data from the carrier when the missile is captive flown. CATS (catapults) are when the aircraft takes off the ship and TRAPS are when the aircraft lands aboard ship.

(4) Captive Carry Summary Report. The Captive Carry Summary Report displays information about a missile when it is captive flown on an aircraft. The difference is that the information is summarized by the serial number of the missile. For example, if a missile has been captive flown 10 different times, the totals of all these flights will appear on one line.

(5) Configuration Report. The Configuration Report will show the current configuration of the missile. The current configuration is based on all available information. The baseline information comes from the as-built configuration list (ABCL) data, and then is modified according to any I level repairs, O level repairs, or configuration summary form (CSF) sheets.

(6) Depot Report. The Depot Report will show information about the failed part as it came into the depot repair facility. It shows where the failed part came from, when it was received, when it was complete, and the fail code. This report is useful for seeing how much activity is taking place at the depot but it does not detail how the part was actually repaired.

(7) Depot Replacement Report. The Depot Replacement Report gives detailed information on what was done to repair the part. It will tell you parts were repaired,

fail codes on why the part failed, and the operation that took place.

(8) Failure Rate Report. The Failure Rate Report is both a report and a bar graph on failure information. The failure data is based on information coming from the I level as the missile is being tested. The Failure Rate Report can be based on IT (incoming test), CT (continuity test), or RT (retest). The default value is IT since that best represents whether the missile first passes or fails on the test station. This report/graph is broken down into passes vs. fails per month.

(9) History Report. The History Report will display any maintenance, movement, configuration, captive flight, acceptance, or I level testing data that occurs to the missile. Essentially, this report summarizes all of the standard reports.

(10) Location Report. The Location Report will display either the last known location of a missile or the entire location history of the missile depending on the option chosen. The location report will only display the location of a missile if it is CONUS. If the missile is not CONUS, the location will be displayed as XXXXXX (otherwise we would have a classified database).

(11) Maintenance Data System (MDS) Report. The MDS Report will reproduce the MDS sheet used at the I level while repairing the missile. As with the CSF report, if you choose to print the MDS sheet, the printed sheet should look exactly like the MDS sheet used by the technician on the I level floor.

(12) Summary of Workload at Activity. The Summary of Workload at Activity Report summarizes the activity that took place at the I level. You can see when the missile entered the activity and every action that took place on the missile.

(13) Serviceable in Service Time. The Serviceable in Service Time Report gives basic information associated with the Maintenance Due Date. With this report you can check the current MDD or view missiles with expired MDD's.

(14) Technical Directive Report. The Technical Directive Report will show what TDs have been applied to what missiles and the date TD was applied.

(15) Test and Failure Report. The Test and Failure Report will show what tests have been performed on a given missile.

CHAPTER 5.5

Configuration and Data Management Support System

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CHAPTER 5.5

Configuration and Data Management Support System

5.5.1 General

5.5.1.1 The Configuration and Data Management Support System (CADMSS) is an on-line computerized system that provides a centralized master data base with a basic capability to support configuration and data management functions imposed by SECNAVINST 5000.2A (NOTAL). Configuration management and data management disciplines are employed in varying degrees throughout a weapon's entire life cycle to control formalization of the weapons system design. Control is exercised through the establishment of a baseline. Each baseline is described by refined and more detailed technical documentation. The baselines (and associated documentation) serve as points of departure from which subsequent refinement and/or modification can be made. The end product of the configuration management and data management disciplines, prior to in-service use, is an operational system sufficiently documented to permit production and deployment. The function of CADMSS within the configuration management process is configuration identification and status accounting. Configuration identification is provided by system, by configuration item, and by contract. The CADMSS function within the data management process includes data identification, procurement specification, configuration audit, data storage, and maintenance of the established master data base. Types of data that are managed by using CADMSS include:

(a.) Technical data, which includes engineering drawings, technical manuals, and specifications.

(b.) Change data, which include engineering change proposals, deviations, and waivers and various contractor change types.

(c.) Baseline data, which include product and contract baseline lists (bills of material) and procurement lists.

(d.) Logistics data, which include parts lists, serialization, packaging, handling, shipping, and testing.

5.5.1.2 All of the data are maintained in CADMSS and updated as changes occur to provide the data tools to support data management disciplines. Principle users of CADMSS are the Naval Air Systems Command; the Naval Air Warfare Center Weapons Division; the Naval Surface Warfare Center

Division, Crane, IN; the Naval Surface Warfare Center Division, Indian Head MD; the Naval Undersea Warfare Center Division, Newport, RI; and Boeing Aerospace Corp., St. Louis, MO.

5.5.2 System Control and Administration. The Chief of Naval Operations is the functional sponsor. The COMNAV-AIRSYSCOM Assistant Commander for Systems and Engineering is the functional manager. COMNAV-AIRSYSCOM is the project manager. NAVAIRWARCENWPNDIV is the automated data system and telecommunication manager.

5.5.3 CADMSS System Description. CADMSS is processed in a data base management system environment and is a centralized data system using versatile modularized software packages. CADMSS was designed so that each module satisfies the specific needs of a particular functional area. The modules interact with each other to provide a capability for meeting the user's total requirement. CADMSS consists of four interacting modules or subsystems. The following subparagraphs describe them and some of their most commonly used on-line queries.

(a.) The technical documentation accounting module (TDAM-001) provides for indexing and accounting of technical data repository information. It contains the following submodules.

(1) Document status, which identifies each document, the current revision status, and the revision history.

(2) Action status which identifies the status of changes to publications and drawings.

(3) Relates part number to drawing.

(b.) Configuration item deliverables status, which tracks these by serial number.

(c.) The baseline accounting module (BAM-007) provides for identification and indenture of parts by bill of material and storage for product baselines. Identifies components by serial/lot numbers. The following are its most commonly used on-line queries.

(1) Baseline change status identifies each engineering change, deviation, and waiver impacting any part, document, or contract for any given baseline.

(2) Baseline total (where used) associates part with each next higher assembly, identifying document, and weapons system per given baseline.

(3) Indenture breakdown displays all engineering drawing data in bill-of-material, top-down format for any given baseline.

(4) Identifies and indentures components by serial/lot number.

(d.) The change accounting module (CAM-004) identifies engineering changes and tracks the change processing milestones. The following are its most commonly used on-line queries.

(1) Change milestones, which concern the engineering change proposal processing status.

(2) Change form description, which displays all or selected data entered on the change form.

(3) Change status by system or major component, which identifies all changes associated with a system or major component (system identification) by type, class, status, facility, or time frame.

5.5.4 CADMSS System Operation.

(a.) On-line queries and hard copy reports combine to provide a wide range of output products that enhance the utility of CADMSS. The on-line queries display data that is easily transmitted in a limited number of screens. Complex lengthy reports are prepared in a selected report format. The report output media includes paper, disk, tape, or file to file data transfer.

(b.) Identified below are the output reports from the CADMSS and their usages.

(1) Technical Documentation Status Report (TDSR). Used as a formal listing of all documents by one or more weapon systems and shows the commonality of each document.

(2) Design Application Record/Equipment Indentured Report (DAR/EIR). Used to verify the content of Product baseline List (PBLs) and Automated Data Lists (ADLs). Also provide identification of next higher assemblies and establish part commonality within a configuration item.

(3) Product Baseline List (PBL). Used to establish contract baselines and identify the current design of a configuration.

(4) Automated Data List (ADL). Used a PBL for COMNAVSEASYS COM requirements.

(5) Approved Source/Quality Verified Products List (AS/QVPL). Used as a listing which identifies all parts requiring qualification and traceability, it also provides government quality control to contractor provided AS/QVPLs.

(6) Open Action Report (OAR). Used for a variety of tasks:

(a.) Providing a current listing to the drawing and specification manager of those changes which are awaiting incorporation into a drawing or specification.

(b.) Providing a current listing to the CCB chairman of those changes which are in the review cycle awaiting a disposition.

(c.) Providing a current listing to the component configuration manager to identify all open changes currently awaiting action and the frame of each.

(7) Change Status by System Report (CSSR). Used to provide a list of all changes received against a weapon system to contractor, sponsors, and program engineers.

(8) Contract Change Status Report (CCRS). Used to verify the contractor baseline reports, identify the current contractor baseline and contractor baseline audits.

(9) Configuration Status Accounting Report (CSAR). Used to provide a list of changes, sorted by change type, written against a specific contract.

SECTION 6

Training

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CHAPTER 6.1

Introduction

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CHAPTER 6.1

Introduction

6.1.1 General. Early planning for training is mandated by Department of Defense Instruction 5000.1 of 23 October 2000 (NOTAL), the Defense Acquisition System. As an element of integrated logistics support (ILS), weapon system training includes the processes, procedures, techniques, training devices, and equipment used to train civilian and active duty and reserve military personnel to operate, maintain, and support the system. This chapter describes the origin and development of Naval Ordnance Maintenance Management Program (NOMMP) training requirements, and the methodology used to satisfy those requirements. In essence, NOMMP training is a component of the Naval Aviation Training Program. Accordingly the NOMMP training process reflects the policies, responsibilities, and procedures prescribed therein regarding initial and continuation training.

6.1.2 Purpose and Scope. This section establishes NOMMP training doctrine and procedures designed to attain the degree of personnel expertise necessary to realize maximum weapon system effectiveness. It is applicable to all levels of airborne weapons maintenance and supporting activities assigned responsibilities under this instruction.

- a. Maintenance training maintains and increases technical knowledge and proficiency.
- b. Formal training is any training with an approved course curriculum.
- c. Lectures, CBT, videotapes/films, PQS, PARs, required reading, and OJT are integral components and must be coordinated to satisfy each individual's activity's particular requirements.

d. On-The-Job training (OJT) consist of personnel performing maintenance tasks by demonstration and simulation, under the supervision of designated, qualified personnel. A well-defined and comprehensive OJT syllabus will ensure maintenance personnel receive the training and acquire the skills necessary to meet the command's operational commitments.

e. Navy and Marine Corps training records will be maintained in accordance with the OPNAVINST 4790.2H volume V (NOTAL).

6.1.3 Training Concept. As an element of the ILS process, weapon system training is a product of concurrent engineering efforts which begin in the earliest acquisition phases and is interactively modified as the system design matures. Training requirements are derived from weapon system life-cycle ILS planning and the assessment of projected force structures which include considerations such as number and type of units to be equipped, quantity and quality (skill level) of each occupational specialty or job series of personnel in each manpower category, and required manning levels per site. Maintenance and support manpower requirements must be consistent with the weapon system's maintenance concept expressed in the respective ILS documentation. The NOMMP training concept is a disciplined evaluation of educational requirements based on organizational, intermediate, and depot level support objectives from initial to full operational capability. To that end, all initial training shall have been identified, programmed, budgeted, and accomplished by not later than fleet introduction of the weapon system. Subsequent training shall be conducted to maintain skill currency necessitated by weapon system design modifications and to sustain steady state occupational specialty manning levels.

Chapter 6.2

Weapon System Acquisition and Training

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CHAPTER 6.2

Weapon System Acquisition and Training

6.2.1 Weapon System Acquisition. The procurement of new weapon systems is accomplished by a comprehensive and methodical procedure known as the acquisition process. Department of Defense (DoD) Directive 5000.1 of 15 March 1996 (NOTAL), Defense Acquisition, establishes a disciplined management approach for acquiring systems and material that satisfy the operational users needs. Mission needs are first assessed to determine if they can be satisfied by nonmaterial solutions (e.g., changes in doctrine, operational concepts, tactics, training, or organization). If approved as a new start acquisition program, operational performance requirements are progressively evolved from broad capability needs to system-specific performance and support requirements (e.g., range, speed, weight, reliability, maintainability, availability, and interoperability). The acquisition process is structured in discrete phases separated by major decision points (i.e., milestones). One element of the milestone decision review is to verify that training requirements have been assessed to influence weapon system design, optimize the selection of training alternatives, and ensure that system source data is available for the timely development of training system equipment and courseware. Concurrent engineering provides the means for ensuring that manpower, personnel, health hazard, safety, and training concerns identified under Integrated Logistics Support (ILS) endeavors are translated into man-machine interface issues that are addressed during system design efforts.

6.2.2 Training System Development. A Program Executive Officer (PEO) is assigned responsibility for the conduct of each approved acquisition. Figure 6-2-1 illustrates basic organizational relationships within the Department of the Navy. The Naval Air Systems Command (COMNAVAIRSYSCOM) Training Systems Program Manager-Aviation (PMA-205) is tasked to provide life-cycle training support for COMNAVAIRSYSCOM sponsored weapon systems. Through close collaboration with the respective PEO, PMA-205 participates in the various acquisition program reviews, ILS meetings, and planning conferences which may influence training. Cognitive, physical, and sensory skills requisites are established and incorporated as task generated training requirements via the Logistics Support Analysis (LSA) process. Existing training resources are evaluated to determine their ability to support identified training needs. Requirements for new or additional training

resources based on peacetime operating tempos, as well as surge and mobilization, are identified.

6.2.3 Training System Funding Support. Acquisition programs are categorized in terms of their total dollar costs and other criteria established by the Secretary of Defense (SECDEF). Budgetary requirements for training system acquisition programs are developed by PMA-205 through use of the DoD Planning, Programming, and Budgeting System (PPBS). The data used by the Defense Planning and Resources Board to develop budgetary requirements for "new start" programs and for continued financial support of ongoing, multi-year procurements is provided to the respective PMAs for inclusion in the overall ILS funding requirements. The three-phased PPBS process prescribed by DoD Directive 5000.1 of 15 March 1996 (NOTAL) is used to allocate limited resources between many competing DoD requirements. Its products provide the basis for making informed affordability assessments and resource allocation decisions on defense acquisition programs. The planning phase results in the development of broad, long-range investment plans for each DoD component. Defense planning guidance that identifies priority operational objectives and required resources is used during the programming phase to develop a 6-year Defense Program for each DoD component and the DoD as a whole. The 6-year Defense Program integrates national policies, strategy, and objectives to specific forces and major programs, including acquisitions. The 6-year program proposal of each DoD component are incorporated into the Program Objectives Memorandum (POM) described earlier in Volume I Chapter 1.2. The budgeting phase results in development of the SECDEF's recommendations to the President for the administration's biennial budget request for the DoD. The POM is the primary document used by PMA-205 for training system funding support.

6.2.4 Training System. The Air Launched Weapons/Ordnance Training System incorporates all aspects of training necessary for the employment of the parent weapon system. This includes materials required for conducting classroom training, media presentation equipment, practical training equipment, (e.g., shapes, trainers, and drones), instructors and administrative personnel, training facilities (e.g., schools, ranges, and targets), and related support services.

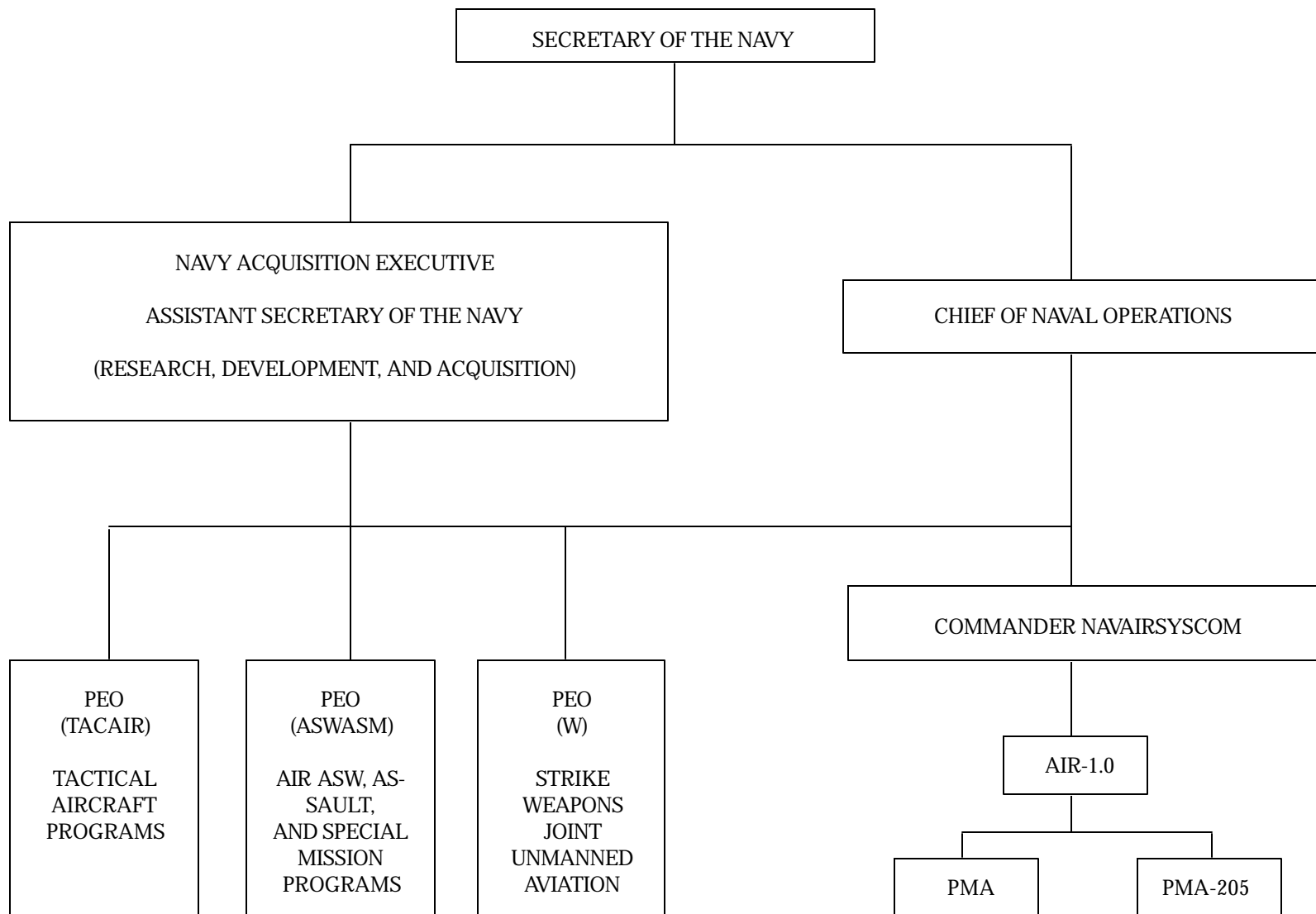


Figure 6-2-1. Naval Aviation Acquisition Structure

6.2.4.1 The total training system is designed to support all training necessary for the effective employment of the parent weapon system throughout its life-cycle. This includes weapon system operation, maintenance, handling, evaluation, certification, and disposal. A training system may be tailored to satisfy the needs of a particular user such as an authorized Foreign Military Sales (FMS) case, joint service use, or to support operational evaluation and certification efforts.

6.2.4.2 Training program materials are developed under a systematic process referred to as Instructional System Design (ISD). The initial ISD phase provides for an analysis of the mission and jobs to be accomplished. A resulting task inventory is then further developed to identify knowledge and skills requirements, and to specify those personnel requiring training. The products of this analysis include a program development and management plan, an implementation plan, a situation analysis report, a weapon system-unique training plan, and a media selection model. In the second phase of ISD, training tasks are converted into learning objectives, sequenced training, course outlines, instructional media, trainee test and evaluation criteria, facilities, and support resources requirements.

6.2.4.3 System life-cycle training serves to fulfill the following requirements:

a. Technical Evaluation (TECHEVAL). Typically, the contractor provides training to selected training team members 30 days prior to TECHEVAL commencement. This normally includes training for system and peculiar support equipment operators, organizational and intermediate level maintenance personnel, Fleet Weapons Support Team (FWST), and Explosive Ordnance Disposal (EOD) team members.

b. Operational Evaluation (OPEVAL). Thirty days prior to commencement, training is provided by Fleet Weapons Support Team (FWST) to personnel designated to participate in the OPEVAL (e.g., flight crew, ground crew, and maintenance personnel).

c. Initial Training. Provided by Fleet Weapons Support Team (FWST) instructors 6 months prior to initial operating capability (IOC), initial training includes operator and maintenance training described above with the addition of depot level maintenance, if appropriate.

d. Follow-on Training. To sustain adequate levels of qualified personnel, fleet instructors at formal training activities provide follow-on training for weapon system operators, maintenance personnel, and EOD team members.

e. On-the-job (OJT) training. Operator, maintenance, and EOD personnel OJT is conducted by user activities on a continuing basis.

6.2.4.4 Training system equipment is identified and developed as an adjunct to a work breakdown structure (WBS) generated during acquisition development and production phase engineering studies. Training equipment products addressed by the WBS process include training shapes, simulators, emulators, audio/video/film media equipment, and associated hardware and software. Figure 6-2-2 provides a summary of airborne weapons trainer configurations described below

a. The Dummy Air Training Missile (DATM) is an inert training device that replicates tactical missile external configuration in weight, size, and center of gravity (CG) characteristics. The DATM is used to train weapon assembly and loading personnel in the proper procedures for canning, decanning, handling, assembly, and loading. For the case of JDAM, a DATM is referred to as a D-2 or Load Trainer.

b. The Captive Air Training Missile (CATM) replicates the tactical missile configuration and typically has a tactical guidance and control section, inert propulsion section, inert warhead, and a training or tactical target detector (depending on the specific missile system). The CATM is used for aircrew tactical flight training consisting of cockpit switchology, targeting, and combat air training against simulated enemy targets. CATMs are also used to train test equipment operators and limited numbers are equipped with in-flight data recorders to support test and evaluation exercises.

c. The Special Test Air Training Missile (NATM)/Air Training Missile (ATM) is a firing version of the missile with the warhead replaced by a telemetry section. The NATM/ATM is used for test, evaluation, and specialized aircrew tactical training on instrumented firing ranges. Telemetered data is analyzed to determine captive flight, target acquisition/tracking, missile launch, and target intercept missile performance characteristics.

WEAPON SYSTEM	A T M	C A T M	C B T	C E S T	D A T M	D T T	N A T M	P E S T	P G W	P T T
AMRAAM		X		X	X			X		
HARM	X	X			X	X		X		X
HARPOON	X	X	X	X	X			X		X
HELLFIRE		X			X			X		
MAVERICK		X	X		X			X		X
PENGUIN		X		X	X			X		
PHOENIX		X			X					
SIDEARM		X		X	X					
SIDEWINDER	X	X			X		X	X		
SLAM	X	X		X	X			X		X
SLAM ER	X	X		X	X			X		X
SPARROW		X								
TOW					X					
WALLEYE									X	

Figure 6-2-2. Airborne Weapon Shapes and Trainer Summary

d. The Classroom EOD Systems Trainer (CEST) is a full-scale tactical weapon mock-up that is cut away to expose those areas requiring performance of render-safe procedures (RSP). The CEST provides realistic training through access to and removal of explosive, hazardous, and classified components. External markings are identical to those used on the tactical weapon.

e. The Practical EOD System Trainer (PEST) is a full-scale mock-up that approximates the weight, CG, external markings, and physical characteristics of the respective tactical weapon. Areas relevant to RSP have the same internal configuration as the tactical weapon. The PEST is used to train EOD technicians the disarming and safing procedures for fuzes, warheads, propulsion sections, detonators, safe/arm devices, pyrotechnics, and other hazardous components.

f. The Practice Guided Weapon (PGW) is an inert trainer that replicates the external configurations and physical characteristics of the MK 2/4/27/38 Walleye Guided Weapon and associated modifications. The PGW is used for aircrew tactical training and handling/loading training.

g. The Computer Based Trainer (CBT) is a personal computer based system designed to provide weapon system engagement training and to augment tactical employment skills. Examples include the HARPOON Engagement Training Aid (HETA) and MAVERICK Engagement Training Aid (META) that provide air crew refresher training at minimum expense.

6.2.5 Post Production Management of Naval Airborne Weapons Training Systems. Post production management is implemented following the final procurement of the prime weapon system and when no further procurement is planned. Training post production support planning is based upon the requirements and concepts established by the ILS process and contained in the respective weapon system's Support planning document. Planning elements presented at ILS reviews and updated through the system's entire life-cycle include post production management of trainers, training weapons, technical support, maintenance, and advisory services for operational and training activities. An updated support plan is prepared before the production phase-out contract is awarded and funding for post production support will be a separate line item.

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CHAPTER 6.3

Airborne Weapons Training/Qualification/Certification

6.3.1 General. The Department of the Navy Explosives Safety Policy Manual, OPNAVINST 8020.14/MCO P8020.11 (NOTAL), promulgates the Explosives Handling Personnel Qualification and Certification (QUAL/CERT) program. It directs fleet commanders to implement and coordinate the program among the various type and operational commanders. The Commandant of the Marine Corps has issued similar guidance in MCO 8023.3 (NOTAL).

6.3.2 Purpose and Scope. The QUAL/CERT program is designed to ensure that all Navy, Marine Corps, and civilians required to handle explosives or explosive actuated devices are fully trained and qualified to perform all functions and tasks safely. Prior to performing said functions and tasks, each person within the scope of the program shall be certified by the command or organizational unit to which assigned.

6.3.3 Personnel Training and Qualification. Formal training provides the requisite knowledge and practical job training (PJT) that form the basis for the qualification phase. When formal training is not available for airborne weapons subject to this instruction, a training shortfall shall be identified. The parent activity is responsible for subsequent in-service on-the-job training (OJT) and certification. Final certification is dependent upon the command's QUAL/CERT Board recommendation for approval based on a review of the candidate's training record, an examination of the individual's technical knowledge, and observation of satisfactorily demonstrated skills. Except as authorized by OPNAVINST 8020.14/MCO P8020.11 (NOTAL) and MCO 8023.3 (NOTAL), only inert devices shall be used for QUAL/CERT training and examination. Supplementary information is provided by NAVEDTRA 43202 series (NOTAL), Non-nuclear Explosive Ordnance Shipboard Handling and Stowage Personnel Qualification Standards (PQS).

6.3.4 The Navy Training System Plan (NTSP). A product of the acquisition process described in chapter 6.2, the NTSP is an official statement of billets, personnel, and training resource requirements needed to support the introduction and life-cycle operational use of an airborne weapon system. New and revised NTSPs are provided to affected type commanders for review and identification of training shortfalls early in the weapon acquisition/upgrade process. The OPNAV Training Management System (OTMS) serves as the single point of reference for NTSP status. The NTSP

assigns responsibilities for planning, programming, and implementing actions necessary to:

- a. Ensure coordination of billets, personnel, military construction, training support, and training planning concurrently with hardware/software development and production.
- b. Provide efficient and adequate training programs phased with initial weapon system introduction and subsequent modifications.
- c. Support higher authority policies established for Navy airborne weapon system acquisition.

6.3.5 Training Tracks. The Chief of Naval Education and Training (CNET) provides formal Navy Training School instruction for officer and enlisted personnel. Fleet training begins with a person's service entry and continues through various training courses with eventual assignment to a naval activity. Course content, scope, depth, and length are tailored to provide the technical knowledge and skills required to meet the respective weapon system's handling and maintenance requirements. Training is accomplished sequentially with basic courses providing knowledge and skills required for subsequent training that establishes a proper foundation for final QUAL/CERT endorsement by the parent command. Formal classroom training is enhanced by the practical application of learned skills in a structured work environment (i.e., PJT).

6.3.6 Training Requirements. Training is tailored to the specific functions performed by the designated activity. With respect to the Naval Ordnance Maintenance Management Program (NOMMP), personnel are trained, qualified, and certified commensurate with their assigned maintenance level. As a minimum, all personnel tasked to perform or support airborne weapons maintenance shall be instructed in the general provisions of the NOMMP, and segments relevant to their duties shall be directed as required reading. In general, the following operational and maintenance requirements derived from acquisition program task analysis pertain.

- a. Organizational Level: aircraft and weapon system inspections, release/control system checks, weapon uploading, testing, arming/dearming, downloading, discrepancy reporting, technical directives, and logbook maintenance. The Naval Aviation Maintenance Training Group Provides

aircraft armament systems skills through course presented by detachment personnel. Fleet Aviation Specialized Operational Training Group (FASOTRAGRU), under aircraft controlling custodian and/or type commander direction, provides training in operational and tactical employment of specific equipment and systems, as well as maintenance related administration and management. Classroom instruction is augmented by hands-on reinforcement on specialized training devices and equipment which realistically simulate the actual weapon system without unduly hazarding the trainees, instructors, or equipment. F/A-18 aircraft loading courses provided by Strike Fighter Weapons School Atlantic/Pacific (STRKFIGHTWPNSCOLANT/PAC) for Navy personnel. Marine Corps personnel receive weapons familiarization and loading training from Fleet Replacement Enlisted Skills Training (FREST) for the AH-1, AV-8B, F/A-18, and UH-1 air craft. This structured training process relieves the unit commanding officer of the responsibility for creating a local training program to achieve the basic qualifications for final QUAL/CERT.

b. Intermediate Level: weapon system and support equipment requisitioning, receipt inspection, storage and handling, unpackaging, cleaning, preservation and touchup painting, installation/removal of wings and fins, ready-service inspection, built-in-test, discrepancy reporting, log-book maintenance, packaging, shipping, technical directive implementation, and record keeping/reporting. Naval airborne weapons maintenance unit functions include all-up-round (AUR) inspection and diagnostic testing, disassembly, replacement of failed sections and external components, assembly, missile refurbishment, and recertification. In addition to the maintenance training available via NAMTRAGRU, intermediate level training is augmented through the use of Fleet Weapons Support Team (FWST) personnel provided by the Naval Air Warfare Center Weapons Division, on request/demand.

c. Depot Level:

1. Naval Weapons Support Facility - AUR and support equipment inspection, fault isolation test, disassembly, repair by replacement of failed sections and external components, preservation and painting, decals/markings, modifications, technical directive implementation, assembly, recertification, record keeping/reporting, and minor container repair as prescribed by the respective weapon system's Industrial Processing Guide. Training availability is similar to that described above.

2. Designated Overhaul Point (DOP) - component receipt inspection, unpackaging, fault verification testing, fault isolation testing, complete overhaul and major repair using recognized and industrially approved methods, technical directive implementation, modifications, painting,

packaging, preservation, and record keeping/reporting. Normally, naval aviation depot (NADEP) training is initially provided on-site by qualified CETS personnel in conjunction with new weapon system contractual requirements. Alternatively, NCTS personnel who have received factory training at the manufacturer's location provide on-site training for NADEP personnel. Subsequent training is usually provided by experienced and qualified NADEP maintenance personnel. The respective DOP is responsible for maintaining a skilled work force, including initial training of new personnel. On request, NADEPs also conduct short duration training for fleet and shore activities with respect to troubleshooting, alignment, specialized procedures, and bench work on various accessories and components.

6.3.6.1 The Aviation Ordnance Officer Career Progression (AOOCP) instruction creates a training path which begins immediately following accession training and culminates in specialized training in preparation for increased levels of responsibility and authority associated with Aviation Ordnance Management. Training is intended to build incrementally on previously acquired skills and to provide graduated educational and professional career paths for Aviation Ordnance Officers. This training is also available to Senior Enlisted Aviation Ordnance personnel Navy/Marine Corps (E7, E8, and E9) and Explosive Ordnance Disposal (EOD) personnel. The AOOCP training is conducted in three levels, commencing with specialized training commensurate with increased levels of responsibilities and authority associated with career progression. Level I training is designed for newly commissioned Aviation Ordnance Limited Duty and Chief Warrant Officers. Newly commissioned or designated Aviation Ordnance Officers (Navy 6360/7361 and Marine Corps 6502) shall en route to their first Aviation Ordnance billet assignment be ordered to attend AOOCP Level I training. Level II instruction is targeted at Aviation Ordnance Officers and Senior Enlisted Aviation Ordnance personnel who are at their mid-career point. Level III intended for Aviation Ordnance Officers and Senior Enlisted Aviation Ordnance personnel who are at their upper career point. The AOOCP instruction is structured, comprehensive training program to standardize and expand upon the level of expertise of Aviation Ordnance Officers and Senior Enlisted Aviation Ordnance personnel. Refer to the Catalog of Navy Training Courses (CANTRAC), for additional course information, including course numbers, convening schedules.

6.3.6.2 Other formal and locally developed training courses related to the airborne weapons QUAL/CERT program include the following:

a. Personnel assigned responsibilities for the requisitioning and accounting of ammunition should attend the Ordnance Logistics Management Course.

b. Personnel designated to be on/off-station explosives drivers shall successfully complete a local station course as defined in SW020-AF-ABK-010 (NOTAL).

c. Mobile crane and forklift operator training per NAVFAC P-300 (NOTAL) is conducted ashore by public works departments.

d. Personnel designated to direct the off-station transportation of ammunition and those selected to inspect/certify motor vehicles or rail cars for transporting explosives shall be trained in accordance with SW020-AC-SAF-010.

e. Operators of mobile ground support equipment used to load aircraft shall be trained and licensed in accordance with OPNAVINST 4790.2H (NOTAL).

f. Ordnance personnel assigned flight deck duties shall attend the Shipboard Air-Launched Weapons General Course.

6.3.6.3 Underway training for Aircraft Carrier Battle Group (CVBG) and Maritime Amphibious Readiness Group (MARG) ordnance, weapons, deck, and combat systems personnel is unique because of significant differences from shore activity environments. Afloat duties are driven by operational demands that vary in scope and intensity with the prevailing phase of workup training or the actual combat scenario. Therefore, OJT for CVBG/MARG personnel can be sporadic and somewhat unpredictable. Carrier Air Wings (CVW) and Air Combat Elements (ACE) embarked on L-form ships (e.g., LHA/LHD) begin their training efforts subsequent to the respective squadrons' post-deployment stand-downs. The ship, on the other hand, undergoes modernization and repair at an industrial activity prior to commencing workup leaving little opportunity for the ship's company to conduct significant airborne weapons training. Since the CVBG and MARG must fight as a team, they must also train as a team to achieve and maintain combat readiness. A pre-deployment workup plan provides for individual ship/squadron efforts to complete basic qualifications with follow-on underway periods of ever increasing intensity and complexity to integrate the team's diverse components. Underway weapons training is coordinated through the Commander, Afloat Training Group Atlantic/Pacific (COMATGLANT/PAC) and major fleet exercises are conducted to simulate deployed contingency scenarios and enhance combat readiness. The CINCLANTFLT Ordnance Handling Safety Assistance Team (OHSAT) and the COMNAVAIR-PAC Weapon Safety Assistance Team (WSAT) can be made available for underway training under the provisions of CINCLANTFLTINST 8020.3E (NOTAL) and COMNAVAIR-PACINST 8020.3D (NOTAL), respectively. Support is also provided for surface force activities via COMNAVSUR-

FLANTINST 8600.1 (NOTAL) and COMNAVSURFPA-CINST 8023.1J (NOTAL).

6.3.7 Personnel Classification Systems. There are several methods of identifying skill, knowledge, and aptitude characteristics for effective manpower management.

6.3.7.1 The Navy Enlisted Classification (NEC) structure, of which the NEC coding system is a part, identifies active and inactive duty Navy personnel best suited to fill specified airborne weapons billets. In cases where NECs reflect special training, inventories of coded billets and qualified candidates are the bases for planning and controlling the assignment of personnel to formal courses leading to initial and progressive NEC code designations. NEC types typically related to airborne weapons are:

a. Entry Series - AO-6899 and DG-9760

b. Rating Series - see figure 6-3-1

c. Special Series - GM-0812 and EOD related 5300 series. Refer to the Manual of Navy Enlisted Manpower and Personnel Classifications and Occupational Standards/ Navy Enlisted Classifications (NAVPERS 18068E) for further details.

6.3.7.2 Similar to the NEC, the U.S. Marine Corps Military Occupational Specialty (MOS) applies to both officer and enlisted personnel for purposes of effective and efficient classification, assignment, career planning, and promotion. See figure 6-3-2 for MOSs associated with airborne weapons. The MOS Manual, MCO P1200.7 (NOTAL), provides further details.

6.3.7.3 The Navy Officer Billet Code (NOBC) is used to identify officer billet requirements and occupational qualifications acquired through billet experience or through a combination of education and experience. An NOBC provides a general description of duties performed in a specified billet. Not all duties are covered, nor is every duty that is listed an absolute requirement of that billet. The NOBC also identifies a group of officer billets that are similar, but not necessarily identical in scope and nature of duties. See figure 6-3-3 for NOBCs that are frequently assigned to aviation ordnance billets.

6.3.7.4 The Navy officer designator identifies an individual's professional training and military experience category (e.g., naval aviation, aviation ordnance, surface warfare, medical corps, supply corps, etc.). The two most often assigned to airborne weapons duties are 636X (Aviation Limited Duty Officer, Ordnance) and 736X (Chief Warrant Officer, Aviation Ordnance Technician).

Billet Specialty	NEC	Training Track
Air Launched Weapons Technician	6801	D/E 646-7007
Strike Intermediate Armament Maintenceman	6802	D/E 646-7001
P-3 Armament/Ordnance IMA Technician	6803	D/E 646-7005
Armament Weapons Support Equipment (AWSE) Maintenance Manager	6810	D/E 646-7100
P-3 Armament Systems (Career) Organizational Maintenance	8319	D 646-1140
EA-6B Armament Systems Maintenceman	8332	D/E 646-1840
F/A-18 Armament Systems Maintenceman	8342	D/E 646-0641
F-14 Armament Systems Maintenceman	8345	D/E 646-164
S-3A Armament Systems Maintenceman	8346	E 646-1740
S-3B Armament Systems Maintenceman (If NEC 8346)	8347	D 646-1744E 102-1749
SH-3 Armament and Related Systems Maintenance Technician	8377	D/E 646-0540
SH-3 Armament and Related Systems Maintenance Technician	8378	E 646-0840
Airborne Mine Countermeasures	8391	(OJT)
Ammunition Handling Equipment Mechanic	AS-7604	DE 602-7000
Crash and Materials Handling Mechanic	AS-7605	D 602-7020
Small Arms Marksmanship Instructor	GM-0812	J 041-0148
Shipboard Elevator Hydraulic/Mechanical System Mechanic	MM-4296	K 690-0082
Shipboard Elevator Electronic/Electrical Maintenance Technician	EM-4671	K 690-0082
Advanced Undersea Mk 46 Maintenance Weaponsman	TM-0746	A 123-0174
Advanced Undersea Mk 46 Test Equipment Weaponsman	TM-0747	A 123-0175
Ordnance Management	TM-0756	A 123-0195
Drone Electronics Technician	AT-6665	(OJT)

Figure 6-3-1 Airborne Weapons Maintenance Related Specialty Skills

Specialty (Occupational Field 6500)	MOS	COURSE
Aviation Ordnance Officer	6502	Q-4E-0010
Aviation Ordnance Trainee	6511	AO-A1
Aircraft Ordnance Ammunition Technician	6531	M 646-7013
Aircraft Ordnance Technician	6531	M-646-0143 for AV-8B M-646-2064 for Helicopters E-646-0053 for F/A-18 R-646-1840 for EA-6B
Aviation Ordnance Equipment Repair Technician	6541	M 646-7020 M-646-7026
Aviation Ordnance Chief	6591	Q-4E-0010

Figure 6-3-2 U.S. Marine Corps Aviation Ordnance Military Occupational Specialties

NOBC	BILLET
6942	Weapons Logistics Officer
6960	Weapons Officer, Naval Activity
6990	Weapons Safety Officer
9053	Staff Weapons Officer
9096	Staff Readiness Officer (Weapons)
9202	Gunnery/Ordnance Officer
9250	Division Officer, Weapons Department (General)
9252	Division Officer, Weapons Department (Gunnery)
9254	Division Officer, Weapons Department (Guided Missiles)
9258	Weapons Officer (General)

Figure 6-3-3 Navy Officer Billet Codes

6.3.8 Funding. Initial instructor training for airborne weapons is funded by Naval Air Systems Command (PMA-205). En route training related to a permanent change of duty station (PCS) is funded by BUPERS. Temporary additional duty (TEMADD), including travel costs, for follow-on training may be funded by aircraft controlling custodians, type commanders, or BUPERS. Requests shall be submitted in accordance with type/functional commander directives and the Catalog of Navy Training Courses (CANTRAC), NAVEDTRA 10500. Training for U.S. Marine Corps personnel shall be requested in accordance with Commandant of the Marine Corps, Commanding General, Fleet Marine Force, or wing directives and the CANTRAC. Funding shall be requested prior to obligation of operational target funds.

6.3.9 Engineering Technical Specialist (ETS) Program. OPNAVINST 4350.2A (NOTAL) establishes policy and delegates responsibilities to COMNAVAIRSYSCOM for administration of the ETS programs. Policies, responsibilities, and procedures for the procurement of ETS are further detailed in COMNAVAIRSYSCOMINST 4350.2C (NOTAL). Both Navy Engineering and Technical Services (NETS) and Contractor Engineering and Technical Services (CETS) are employed to support aircraft systems training. ETS personnel provide interim information, instruction, and training to operating forces from Initial Operating Capability (IOC) through Navy Support Date (NSD). Primary source of ETS is from Naval Aviation Engineering Service Unit (NAESU) San Diego CA, for aircraft systems. Requests for ETS after NSD require formal identification of logistics shortfalls to the sponsor for funding justification.

6.3.9.1 NAESU functions and responsibilities include:

- a. Providing tailored, on-site training on all aspects of aircraft systems equipment (formal, informal, and OJT).
- b. Providing expertise, information, and assistance on the application, use, theory, troubleshooting, and repair of systems/equipment.
- c. Developing work-arounds, procedures, and methods for maintenance of systems/equipment.
- d. Identifying system deficiencies and recommending solutions.
- e. Reviewing, evaluating, and contributing to new and updated technical publications.
- f. Assisting, evaluating, and reporting on installation of and/or modifications to systems/equipment.
- g. Providing technical assists to operating forces in response to maintenance difficulties.

- h. Participating in logistics meetings and conferences.
- i. Assisting the fleet in identifying training needs.

6.3.10 Naval Air Warfare Center Weapons Division (NAVAIRWARCENWPNDIV) Fleet Weapons Support Team (FWST). Navy Engineering and Technical Services (NETS) and Contractor Engineering and Technical Services (CETS) are employed to support airborne weapon training. NAVAIRWARCENWPNDIV Fleet Weapons Support Team (FWST) functions and responsibilities for airborne weapons include:

- a. Providing on-site/on-call personnel specializing in air launched missiles, conventional ordnance, targets, tactical air launched decoys, and their associated racks, launchers, and support equipment.
- b. Providing Missile Assist Team (MAT) personnel and services in accordance with Volume I Section 3.
- c. Provide personnel, within prevailing manning constraints, to fleet aircraft squadrons in support of wing-sponsored Integrated Weapons Systems Review (IWSR) or similar formal training programs, missile, conventional ordnance, and gunnery exercises.
- d. Provide classroom, PJT, OJT, and refresher training.
- e. Perform trend analysis of airborne weapon system maintenance performance.
- f. Providing personnel to fleet and composite squadrons, the Atlantic Fleet Weapons Training Facility (AFWTF), and numbered fleet commanders to assist in surface/air launched targets and associated launching devices.
- g. Provide technical support while conducting Aviation Ordnance Readiness Reviews (AORR's) in accordance with Volume I, Section 3.
- h. Providing personnel for performing post deployment Missile Sentencing Inspection (MSI) and training for fleet personnel performing Missile Pre-sentencing Inspection (MPI).
- i. Providing personnel, as requested, to organizational and intermediate level maintenance activities for technical and training issues related to weapon upgrades, variants, and associated aircraft fire control system.
- j. Providing personnel, as requested, for underway training of deploying wings, squadrons, and aircraft capable ships.
- k. Providing airborne weapons/test equipment training curricula and on-site training for naval weapons station personnel.

l. Initiating and maintaining a QUAL/CERT program for assigned personnel.

m. Developing and maintain training aids/curricula, as tasked, and distributing audio visual devices/material used by FWST field personnel.

n. Support the airborne weapons handling damage program, providing assessments, and recommending corrective action.

o. Provide support in the Deficiency Reporting Program described in volume I section 4.6.

p. Providing technical support for initial shipboard installation of airborne weapons.

q. Provide personnel at all levels of airborne weapons maintenance with training in hazardous materials control and management, as well as in the use of COMNAVAIRSYSCOM 01-1A-75. See volume I, section 4 for further details.

6.3.10.1 Responsibilities.

6.3.10.1.1 Command or Station. The command or station will perform the following actions

a. Provide adequate office space, with phone service for requested FWST personnel.

b. Request training, technical support, and airborne weapons assistance with local FWST personnel.

c. Request FWST travel requirement via message to type commanders and info NAWCWPNS (Code 311200E).

d. If type commander/FWST program travel funds are not available to support requested travel, local commands will provide travel funding and coordinate effort with type commander and FWST program office.

6.3.10.1.2 Type Commanders. Type commanders will perform the following:

a. Ensure commands/stations provide adequate office space, with phone service, for requested FWST personnel.

b. Coordinate Fleet operational requirements with FWST program office (Code 311200E).

c. Establish, practice, and request FWST travel requirements with FWST program office (Code 311200E).

6.3.10.1.3 FWST Program Office (Code 311200E). The FWST program office will perform the following:

a. Provide trained NCTS and CET personnel to support fleet approved requests/requirements for FWST support.

b. Manage the FWST program in accordance with COMNAVAIRSYSCOM work unit assignment.

c. Provide quarterly travel expenditure reports to type commanders for assigned FWST personnel.

d. Provide annual budget requirements to COMNAVAIRSYSCOM based on fleet requirement.

e. Coordinate all FWST effects with type commanders.

f. Inform COMNAVAIRSYSCOM (Code 3.1.1B) on FWST program status as required.

6.3.10.1.4 COMNAVAIRSYSCOM 3.1.1B. COMNAVAIRSYSCOM will perform the following actions:

a. Coordinate with type commanders and FWST program office to determine the annual FWST personnel requirements.

b. Provide work unit assignment and funding required to the FWST program office for program execution.

6.3.11 Naval Aviation Maintenance Training Group (NAMTRAGRU). The mission of NAMTRAGRU is to provide technical training for officer and enlisted personnel in the operation, maintenance, and repair of aircraft systems and associated equipment in response to CNO (N78) requirements. Additionally, NAMTRAGRU provides technical support to COMNAVAIRSYSCOM in the maintenance training acquisition process. As a technical advisor, NAMTRAGRU provides the most cost effective training, monitors contracted curriculum development, recommends maintenance trainer design and procurement, provides training standardization and develops near and long term requirements recommendations for CNO and COMNAVAIRSYSCOM. Other function include:

a. Providing tailored, on site training on intermediate maintenance level aspects of air-launched weapons.

b. Reviewing, evaluating, and contributing to new and updated publications.

c. Participating in logistics meetings/conferences.

d. Providing Initial and career course training.

e. Providing on site/on call personnel specializing in air-launched missiles, conventional ordnance, targets, remotely piloted vehicles, tactical air launched decoys, and their associated racks, launchers, and support equipment.

f. Supporting fleet organizational and intermediate level activities tasked with handling, preparing, and launching remotely piloted vehicles.

g. Providing on-demand personnel for underway training of deploying wings, squadrons, and aircraft capable ships.

h. Developing and maintaining training aids/curricula as tasked.

i. Developing domestic and foreign military sales special site training.

j. Providing technical support for initial shipboard installation of airborne weapons.

k. Providing Fleet Introduction Assistance Training (FIAT) as required for new weapon support equipment test equipment.

6.3.12 Inert and Training Ordnance/Weapons. The QUAL/CERT program prohibits individuals from accomplishing any task with live explosives or explosive devices until they have been properly certified. Accordingly, only inert ordnance is normally used for PJT and OJT. Formal schools identify required classroom/laboratory inert training devices per NAVEDTRA 130/135. These requirements are supported by PMA-205 through the Life Cycle Product Support (LCPS) program. The respective weapon system's NTSP and logistics support plans identify training devices (e.g., all-up-rounds, components, etc.) required for operator, assembly, loading, explosive ordnance disposal, and maintenance personnel training. Depending on the system, a training device may be assigned a Navy Ammunition Logistics Code (NALC) as listed in TW 010-AA-ORD-030 and/or National Item Identification Number (NIIN) for requisitioning purposes. Other training devices for which neither NALC nor NIIN has been assigned are also available (e.g., expendable countermeasures via Naval Surface Warfare Center Division (NAVSURFWARCENDIV) Crane, IN, and cartridge actuated devices via NAVSURFWARCENDIV Indian Head, MD. Fleet shortfalls of inert loading/assembly devices shall be identified to PMA-205-1H or Naval Ordnance Center (N4), in accordance with enclosure (5) of OPNAVINST 8023.2C, as appropriate.

6.3.13 Training Publications. The Catalog of Navy Training Courses (CANTRAC) contains information on schools and courses under the purview of CNET and other Navy training commands. In addition to the CANTRAC and NEC/MOS documents discussed above, the following are also available for related training information:

a. The automated Navy Integrated Training Resources and Administration System (NITRAS) is responsive

to demands for training data required by the Chief of Naval Education and Training, BUPERS, the Navy Recruiting Command, and other high level authorities.

b. The List of Training Manuals and Correspondence Courses (NAVEDTRA 10061 Series) is a catalog of professional subjects training manuals and self-study courses for both officer and enlisted personnel. The list is revised and distributed to all ships and stations annually.

c. The Index to the Directory of Navy Training Devices prepared by the NAVICP is a listing of training devices, training aids, accessories, and modification kits that are under Naval Training Equipment Center inventory control. Listed items are cross-referenced to a multi-volume directory that contains descriptive data of each device.

6.3.14 Training Program Evaluation and Improvement. To assure the continued currency, relevance, technical accuracy, and adequacy of airborne weapons training courses, various means of measuring their effectiveness have been implemented. The Chief of Naval Education and Training (CNET) maintains a training appraisal program based on external feedback from all naval activities to improve the quality of school graduates and, thus, enhance fleet readiness. The CNET maintains an internal feedback program via NAMTRAGRU contact with fleet activities concerning the validity and effectiveness of assigned training courses. PMA-205 is responsible for providing policy direction, controlling and coordinating the Training Audit Program, assigning audit team leaders, monitoring training data reviews, and serving as the central point of contact for technical audits/reviews of aviation specialized training schools. Other systems commanders, type commanders, and aircraft controlling custodians are responsible for supporting training audits at schools which have courses under their cognizance, providing audit team leaders/members as requested, and for arranging fleet participation as may be required.

6.3.14.1 The Maintenance Training Improvement Program (MTIP) provides diagnostic testing of personnel performing organizational and intermediate level maintenance functions. A qualitative assessment of training courses, training materials, and weapon system skill levels is made by evaluation of the technical knowledge displayed by the respective personnel at any point in the training sequence. When appropriate, remedial actions are taken to upgrade any training program deficiencies. Under policies established by CNO (N78), PMA-205 provides technical assistance in the development, implementation, and support of software requirements and training materials. Type commanders and aircraft controlling custodians issue implementing directives, provide guidance, and ensure adequate planning to support the MTIP.

6.3.14.2 The Maintenance Training Requirements Review (MTRR) is sponsored by CNO (N789) for designated weapon systems training courses. To promote sustained training excellence, the MTRR program objectives are to review formal and practical school curricula, identify training deficiencies, and initiate program actions to achieve effective, coordinated and standardized training. Review process also ensures planned skill progression between “A” schools, pipeline training and fleet follow-on training. The Navy Training Requirements Review (NTRR) Instruction OPNAVINST 1500.69 (NOTAL), provides detailed review objectives.

6.3.14.3 The Standard Training Activity Support System (STASS) is a computerized system used to facilitate management of the NAMTRA training program. The STASS provides student scheduling into various courses, generates student reports, performs diagnostic testing and grading, and maintains individual and unit statistical data. This system is also used to manage MTIP question banks, provide automatic test grading capability, generate reports, and schedules classes for personnel in the MTIP program.

6.3.14.4 The Aviation Training Improvement Program (ATIP) identifies naval air reserve personnel training defi-

ciencies and is compatible with MTIP. COMNAVAIRESFORINST 1500.5 (NOTAL) provides further ATIP details and program guidance.

6.3.14.5 The Individual Training Standards System/Maintenance Training Management and Evaluation System (ITASS/MATMEP) is an evaluation program unique to Marine Corps enlisted aviation MOS. It identifies the tasks skills and knowledge requirements of each MOS and incorporates the MTIP testing for evaluating an individual’s “hands-on” performance capability and technical knowledge. MCO P4790.12 (NOTAL) establishes ITSS/MATMEP policy, procedures, and responsibilities.

6.3.14.6 Under the auspices of aircraft controlling custodians, Aviation Maintenance Management Teams evaluate performance, advise, train, and assist fleet activities in matters related to weapons procedures, logistic support, QUAL/CERT, and human resources. The teams are available to both Navy and Marine Corps activities on request. COMNAV-AIRLANTINST 13020.1A (NOTAL) and COMNAV-AIR-PACINST 4790.44 (NOTAL) are the implementing directives for Aviation Maintenance Management Teams.

RECORD OF CHANGES			
CHANGE NO.	DATE	TITLE OR BRIEF DESCRIPTION	ENTERED BY

OPNAVINST 8000.16A

**THE NAVAL ORDNANCE MAINTENANCE
MANAGEMENT PROGRAM (NOMMP)**

VOLUME II

**ORGANIZATIONAL, INTERMEDIATE
AND DEPOT LEVEL MAINTENANCE
RESPONSIBILITIES**



**DEPARTMENT OF THE NAVY
OFFICE OF THE CHIEF OF NAVAL OPERATIONS
WASHINGTON D.C.**

1 JUNE 2001

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CHAPTER 1.1

Introduction

1.1.1 General. This chapter addresses maintenance program management of air launched missiles. During a weapon system's deployment life cycle phase, maintenance program management is a critical management function due to the impact of maintenance requirements on the effective use of personnel, materials, facilities, and fiscal resources. Maintenance program management functions include maintenance planning, coordinating, budgeting, and evaluating program process. Air launched missiles are under the technical cognizance of the Naval Air Systems Command (COMNAVAIRSYSCOM). Inventory management responsibilities are assigned to the Naval Ammunition Logistics Center (NALC) Mechanicsburg, PA. Throughout this section, the term "air launched missiles" will include those designated air missiles capable of being launched from surface and subsurface platforms as indicated in figure 1-1-1.

1.1.2 Responsibilities

1.1.2.1 The Assistant Commander of Naval Air Systems Command for Fleet Support and Field Activity Management (AIR-3.0), through the Logistics Management Division (AIR-3.1), is responsible for the program management and funding of airborne weapons maintenance programs. COMNAVAIRSYSCOM (AIR-3.1) is responsible for management, integrated logistics support, and maintenance engineering functions pertinent to airborne weapon systems under COMNAVAIRSYSCOM cognizance.

1.1.2.2 Assistant Program Managers, Logistics (APML) within COMNAVAIRSYSCOM (AIR-3.1) plan and implement integrated logistics support and project support management activities for major weapon systems. APMLs are responsible directly to COMNAVAIRSYSCOM weapon system program managers, Air for logistics aspects of acquisition programs from inception through deployment and eventual phaseout from the active inventory. The APMLs are directly responsible to the Director (AIR-3.1) for the effective planning and development of operation effectiveness and cost-effective support systems for acquisition programs. The WALLEYE program is a decentralized program and therefore the assistant deputy program manager and assistant program managers are located at the field activity Raytheon Technical Services Company Indianapolis, IN vice COMNAVAIRSYSCOM Headquarters.

1.1.2.3 Volume I, chapter 2.2 defines maintenance functions and chapter 2.3 assigns maintenance responsibilities that apply to air launched missiles. Chapters 1.2 through 1.4

describe the organizational, intermediate, and depot level maintenance actions that apply to air launched missiles.

1.1.3 Applicability. Paragraphs 1.1.3.1 through 1.1.3.14 provide air launched missile system descriptions. Figure 1-1-1 provides a missile model matrix defining employment.

1.1.3.1 SPARROW. The SPARROW is a medium-range, all-weather, supersonic, air-to-air guided missile. The AIM/RIM-7R is most recent configuration and adds a dual mode radio frequency/infrared (RF/IR) seeker capability. Each new version has resulted in substantial improvement in missile performance. The AIM/RIM-7E reduced minimum range restrictions and provided dogfight capabilities. The RIM-7H incorporates rapid run-up capabilities, providing improvements over previous versions. The AIM-7F incorporates solid state circuitry and modular design, an improved warhead, and a boost-sustain rocket motor. The RIM-7M guidance and control section is common with the AIM-7M. When used in the surface launched RIM configuration, folding wings, clipped fins, and a remotely armable rocket motor are used. The AIM/RIM-7M utilizes a missile-borne computer (MBC), an active fuze system, motorized seeker head tracking, and improved maintainability and produceability. The AIM/RIM-7P missile has undergone two block modifications. The AIM/RIM-7P Block I provides low altitude guidance and fuzing capability. The AIM/RIM-7P Block II provides increased memory and throughput to the MBC, enhanced production software reprogrammable capability, and mid-course uplink improvements to the rear receiver. The AIM/RIM-7P Block II is the base line for the AIM/RIM-7R missile. The AIM/RIM-7 series is a semiactive, air-to-air, boost-glide missile, designed to be either rail or ejection launched. Semiactive, continuous wave, homing radar, and hydraulically-operated control surfaces direct and stabilize the missile on a proportional navigational course to the target. Propulsion for the missile is provided by a solid propellant rocket motor. SPARROW is capable of being launched by all U.S. Navy fighter aircraft and provides ship defense against enemy aircraft and cruise missiles when employed as a Basic Point Defense Surface Missile System. Missile-to-aircraft electrical and mechanical interface is provided by the launchers listed as follows for the applicable aircraft:

F-4	(AERO-7 ejection)
F-4	(LAU-17 rail)
F-14	(LAU-92 ejection)

	Air-to-Air AIM	Air-to-Surface AGM	Surface-to-Air RIM	Surface-to-Surface RGM	Surface-to-Surface UGM
SPARROW AIM-7	AIM-7E AIM-7F AIM-7M AIM-7PI AIM-7PII AIM-7R		RIM-7E RIM-7H RIM-7M RIM-7PI RIM-7PII RIM-7R		
AMRAAM AIM-120	AIM-120A AIM-120B AIM-120C				
SIDEWINDER AIM-9	AIM-9H AIM-9L AIM-9M				
PHOENIX AIM-54	AIM-54A AIM-54C				
HARM AGM-88		AGM-88B AGM-88C			
MAVERICK AGM-65		AGM-65E AGM-65F			
SIDEARM AGM-122A		AGM-122A			
PENGUIN AGM-119B		AGM-119B			

Figure 1-1-1. Missile Model Matrix

	Air-to-Air AIM	Air-to-Surface AGM	Surface-to-Air RIM	Surface-to-Surface RGM	Surface-to-Surface UGM
JSOW AGM-154		AGM-154A AGM-154B AGM-154C			
HARPOON AGM-84		AGM-84D-1		RGM-84D-2,4,5	UGM-84D-1
SLAM AGM-84E-1		AGM-84E-1			
SLAM-ER AGM-84H-1		AGM-84H-1			
HELLFIRE AGM-114		AGM-114B AGM-114K			
TOW BGM-71		BGM-71		BGM-71	
WALLEYE		WALLEYE I & II WALLEYE I & II ERDL (Phase I) WALLEYE I & II ERDL/ DPSK (Phase II)			

Figure 1-1-1. Missile Model Matrix(Cont'd)

F-15	(LAU-106 ejection)
F-16	(LAU-106 ejection)
F-18	(LAU-115 rail)
F-18	(LAU-116 ejection)

1.1.3.2 AMRAAM. The AIM-120 Advanced Medium Range Air-to-Air Missile (AMRAAM) is an all-weather, radar guided, missile designed as the next generation, medium range air-to-air missile replacing the AIM-7 SPARROW. AMRAAM was developed to significantly improve operational capabilities and reliability while reducing operational cost. AMRAAM is delivered and supported as an all-up-round (AUR), requiring only the installation of a buffer connector and flight control surfaces in the fleet. The missile is 144 inches long, 7 inches in diameter and weighs a maximum of 348 pounds. The wing span for AIM-120A and B models is 25 inches and was reduced to 19 inches for the AIM-120C to accommodate internal carriage on the F-22 aircraft. Three series of the AMRAAM are currently in the Navy inventory. The AIM-120A baseline version, the AIM-120B that added software reprogramming capability, and the AIM-120C, which features smaller flight control surfaces. A block number included in the missile Type Model Series (TMS) designator identifies hardware improvements to the AIM-120C. All Navy inventory AMRAAM missiles are equipped with a Thermal Initiated Venting System (TIVS) to meet Navy Insensitive Munitions (IM) requirements aboard ship. The TIVS is contained within the missile wiring harness that also includes an indicator showing whether the system is either enabled or disabled. AMRAAM does not require external arming or dearming. An indicator for the rocket motor arm-fire device is provided. The AMRAAM missile system has been integrated with the F/A-18 and Air Force F-15 and F-16 aircraft. Missile launchers applicable to the AMRAAM with F/A-18 are the LAU-127 (rail) and LAU-116 (eject). Missile testing on the aircraft is accomplished by initiating the missile Built-In-Test (BIT) capability. Warhead replacement telemetry units are used to convert tactical versions of the AMRAAM for test and fleet firings. These missile configurations are identified as AIM-120A/B/C missiles. AMRAAM is shipped and stored in a reusable container that can accommodate from one to four missiles with buffer connectors and flight control surfaces.

1.1.3.3 SIDEWINDER. The AIM-9 SIDEWINDER series was developed as a short-range, supersonic, air-to-air missile. It employs a passive infrared target acquisition system, proportional navigational guidance, a torque-balance control system, and a target detector. The missile is propelled by a solid propellant rocket motor. The development process has produced increased capabilities with each missile modification. The AIM-9G provided the capability to lock on and launch against a target offset from the axis of the

launch aircraft. With the AIM-9H configuration, solid-state modules replace vacuum tubes, and a thermal battery replaces the turbo-alternator. Improvements in heat sensor and control systems have provided the AIM-9L missile with an all-aspect attack capability and improved guidance characteristics. The AIM-9M missile is the most recent configuration and utilizes a guidance control section with counter-countermeasures and improved maintainability and producibility. The AIM-9H was configured with a continuous-rod bundle warhead and AIM-9L/M with an annular blast fragmentation warhead. The guided missile launcher LAU-7A (series) is a reusable single rail launcher which provides the mechanical and electrical interface between the missile and the launch aircraft. It houses the nitrogen receiver assembly used to cool the missile guidance system's infrared detector.

1.1.3.4 PHOENIX. The AIM-54 PHOENIX series missile was developed as the principal long-range, air-to-air defense armament of the F-14 aircraft. The weapon system consists of an AIM-54 guided missile, interface system, and a launch aircraft with an AN/AWG-9 weapon control system. The total weapon system has the capability to launch as many as six AIM-54 missiles simultaneously from the F-14 aircraft against an equal number of targets. The AIM-54 is a radar-guided, air-to-air, long-range missile consisting of a guidance, armament, propulsion, and control section, interconnecting cables, wings and fins. The AIM-54A was the original version to become operational. The AIM-54C (ECCM/Sealed) missile is the most recent version and contains improved electronic counter-countermeasure capabilities and does not require coolant conditioning during captive flight. The AIM-54C and AIM-54C (ECCM/Sealed) contains built-in self test and additional missile on-aircraft test capability. The AIM-54C missile has also been designed for greater reliability, longer serviceable in-service time, and a 15 percent reduction in parts. The missile interface system consists of launchers, weapons rails, multi-purpose adapter pylons, and PHOENIX adapter assemblies. The LAU-93/A launcher is used to carry and launch the missile from F-14A/B aircraft. The LAU-132 series launcher is used for the F-14D aircraft and AIM-54C ECCM/Sealed missile. For fuselage stations, the launcher is mated to a weapons rail; for wing stations, it is mated to a multipurpose adapter pylon.

1.1.3.5 HARM. The AGM-88B/C High Speed Anti-Radiation Missile (HARM) is an evolution of past anti-radiation missile weapon systems: SHRIKE and STANDARDARM. HARM incorporates the more desirable features of each while providing additional capabilities that enhance operational effectiveness. The system consists of the guided missile, LAU-118(V)1/A launcher, launch aircraft, and HARM peculiar avionics. The weapon system has the capability of detecting, acquiring, displaying, and selecting a radiating

threat and launching a missile or missiles. The HARM missile has a terminal homing capability that provides a launch and leave capability for the launch aircraft. The HARM AGM-88 is a supersonic, air-to-ground, rail-launched guided missile. Guidance is provided through reception of signals emitted from a ground-based threat radar. It has the capability of discriminating a single target from a number of emitters in the environment. The C version has an improved guidance section which incorporates improved tactical software and an electronically reprogrammable memory. The missile has four major sections: guidance, control, warhead, and rocket motor, which can separate at section joints to facilitate maintenance. The Navy LAU-118(V)1/A launcher provides the mechanical and electrical interface between the missile and aircraft. It is a single rail launcher modified from the AERO-5B-1 series. A unique mechanical configuration prohibits installation of the HARM missile on an unmodified AERO-5 launcher. The Navy LAU-118(V) 1/A is electrically different than the Air Force LAU-118(V)2/A launcher and is not interchangeable.

1.1.3.6 MAVERICK. The AGM-65 series MAVERICK is an air-to-surface, rocket propelled, guided missile that can be configured with either a laser or infrared seeker. The MAVERICK weapon system consists of the MAVERICK guided missile with a laser or infrared seeker, LAU-117(A)(V)2/A launcher, and a launch aircraft with MAVERICK-peculiar avionics incorporated. The weapon system was designed primarily for the destruction of hard point targets such as tanks and bunkers. It employs the capability for day or night operations, sufficient standoff range to permit avoidance of enemy defenses, and terminal homing guidance for a launch-and-leave capability. The AGM-65F employs an infrared seeker and the AGM-65E uses a laser seeker. The infrared and laser seeker sections can be interchanged with no other alterations to the missile. The Navy AGM-65E/F differs from previous Air Force MAVERICK missiles by incorporating a heavier warhead, a dual thrust rocket motor, and an infrared or laser seeker. The LAU-117(A)(V)2/A is a single rail-guided missile launcher developed for the MAVERICK system. It provides the mechanical and electronic interface between the missile and launch aircraft. The launcher utilizes a mechanical restraint device that was developed to meet both the Navy and Air Force requirements. It provides increased capability over previous MAVERICK launchers by incorporating seeker slaving circuitry which enhances MAVERICK's target acquisition capability.

1.1.3.7 SIDEARM. The AGM-122A SIDEARM weapon system consists of an air launched guided missile, which employs passive radar detection, proportional navigation guidance, and an active optical target detecting device. The missile utilizes the LAU-7 series launcher. The SIDEARM

utilizes an AIM-9C SIDEWINDER guidance section modified to detect and track a radiating ground-based air defense system radar. The target detecting device is modified for air-to-surface use, employing forward hemisphere acquisition capability. SIDEARM shares a high degree of commonality with SIDEWINDER AIM-9L/M aft components. The AIM-9L/M warhead, safe and arm device, rocket motor, and wings are redesignated SIDEARM-unique at the time they are painted green. The LAU-7 SIDEWINDER launcher provides the electronic and mechanical interface between the missile and launch aircraft. The LAU-7 internal cooling capability (nitrogen bottle) is not used for SIDEARM application.

1.1.3.8 PENGUIN. The AGM-119B PENGUIN missile is an air-to-surface missile designed to be launched from an SH060B Light Airborne Multipurpose System (LAMPS) MKIII Helicopter operating from U.S. Navy FFG-7 and DD-963 Class Ships. The PENGUIN missile is a short-to-medium range inertially guided missile with infrared (IR) terminal homing. It is capable of gravity drop launches at low speeds and altitudes. Ships and surfaced submarines are the missiles primary targets. The PENGUIN missile is a helicopter launched version of the Norwegian MK 2 MOD 3 missile which has been modified and designated as an MK 2 MOD 7. It is manufactured by Norsk Forsvarsteknologi A/S located in Kongsberg, Norway. The missile consists of a seeker, navigation and control section, warhead, rocket motor, four folding wings and four canards. The PENGUIN weapon system consist of the AGM-119B guided missile, Missile Launcher Assembly (MLA), and Missile Control System (MCS). The MLA contains the MCS and attaches to the pylons of the SH60B LAMPS MKIII Helicopter and provides mechanical attachment points for missile launch/release system a (BRU-14 bomb rack with two AERO-1A adapters). The MLA, with BRU-14 attached, carries and launches the PENGUIN on command. The MCS is an integral part of the MLA. The MCS is located in the MLA and provides the interface between the helicopter and the missile for control, transfer of data, and electrical power during captive flight. The MCS contains the alignment unit, missile power unit, alignment power unit, umbilical release unit, and umbilical and interconnecting cables.

1.1.3.9 HARPOON. The HARPOON is an all-weather, antiship, subsonic, surface attack guided missile that can be delivered from an aircraft (AGM-84), surface vessel (RGM-84), or submarine (UGM-84). The various launch configurations are obtained with the installation of the applicable launch kits, booster section, canister, or capsule. All configurations are capable of over-the-horizon launch ranges and have built-in self test capability. HARPOON employs a low-level cruise profile, active radar guidance with counter-countermeasures, and terminal maneuvering to as-

sure maximum weapon effectiveness. It consists of four major sections: guidance, warhead, sustainer, and control sections. A booster section is added to the aft end of the missile for surface and subsurface launches. The warhead section is replaced with an exercise section for evaluation and training exercises. An appropriately configured HARPOON can be launched from a BRU-32/A, BRU-15/A, or MAU-12 bomb rack; a MK 13 Mod 4 (TARTAR) or MK 141 Mod 1 (Canister) launcher; or from a submarine's torpedo tubes.

1.1.3.10 SLAM. The AGM-84E SLAM is an air-to-surface missile with a sufficient enough standoff range to ensure high survivability of launch aircraft in attacks against surface targets. SLAM's primary mission is to strike high value fixed land targets and ships in port. It also has the capability of complementing HARPOON in its role of attacking ships at sea. SLAM is an air-launched missile planned for use on the F/A-18 and P-3C aircraft. SLAM is a four section missile in which three sections are similar to those used on the AGM-84 HARPOON missile. The sustainer and warhead sections have minor internal changes from HARPOON. The control section is the same as HARPOON with the addition of a data link antenna. The guidance section is composed of off-the-shelf equipment from other missile systems.

1.1.3.11 SLAM-ER. The AGM-84H SLAM-ER is an air-to-surface missile adapting the baseline SLAM to accommodate Adaptive Terrain Following capability, extended standoff range, improved warhead penetration and flexible mission planning. SLAM-ER is an air-launched missile designed for use on the F/A-18 aircraft. The SLAM-ER incorporates planar wings to provide increased range, improved survivability, and a higher operating envelope. The warhead section combines the new warhead assembly designed for increased hard target penetration. The SLAM-ER incorporates a multi-channel Global Positioning System to complement the Inertial Navigation System in providing a high degree of accuracy against hardened high value surface targets.

1.1.3.12 HELLFIRE. The AGM-114B HELLFIRE missile is an antiarmor, laser guided, air-to-ground weapon which uses a shaped charge warhead to defeat hard point targets with minimal exposure of the launch helicopter to enemy fire. Guidance is provided through automatic terminal homing on laser signals reflected from a laser designated target. The HELLFIRE weapon system consists of an AGM-114B basic AGM-114K and AGM-114M HELLFIRE II missiles, M272 launcher (used on AH-1W helicopter), M299 launcher (used on the SH/UH/HH-60 helicopters), HELLFIRE-peculiar avionics, and a laser target designator. Laser target designators can be hand-held or tripod-mounted by ground observers or aircraft mounted units (NTS used on AH-1W) FLIR System used on (SH/UH/HH-60). The mis-

sile consists of four major sections: seeker, guidance warhead, propulsion, and control. The only difference between the Army and Navy basic HELLFIRE versions is that the Navy version has a safe and arm device in the propulsion section. There is no difference between the Army and Navy AGM-114K HELLFIRE versions. The safe and arm device, which has an out-of-line igniter, provides the additional safety required for shipboard use. The M272 and M299 guided missile launcher were developed specifically for the HELLFIRE missile and provide the electronic and mechanical interface between the missile and helicopter. The launcher is capable of carrying one to four missiles on each launcher. The M272 and M299 launcher will only be carried on the outboard stations of the stub wing on the AH-1W aircraft. The M299 launcher will be carried on the left-hand extended pylon on the H-60 series aircraft. The length, weight, and physical characteristics of the HELLFIRE II missile are the same as the basic missile allowing full compatibility with launch platforms, shipping containers and support systems currently in place.

1.1.3.13 TOW. The BGM-71 TOW is a solid propellant guided missile. It is tube launched, optically tracked, and wire guided. The TOW weapon system was developed to provide the capability of destroying enemy armor and other hard point targets. Adding TOW's lethality to the mobility of a helicopter launch platform significantly improved the weapon's effectiveness. The weapon system consists of the AH-1W helicopter, M65 avionics, TOW missile launcher, and the BGM-71 series guided missiles. The all-up-round missile is enclosed in a launch container until it is launched. The launch container has removable forward and aft end protective caps that provide an airtight environment during stowage. The launch container provides protection for the missile during handling and stowage and also serves as an integral part of the TOW missile launcher. The TOW missile launcher provides the electrical and mechanical interface between the missile and launch helicopter. Each TOW launcher holds two TOW missiles. The helicopter is capable of holding four TOW missile launchers on outboard stations for a maximum of eight missiles. A radio frequency shield (MSU-710/A) is installed in each TOW missile launcher tube prior to loading a missile to the igniter circuits. Radio frequency shield is not required for TOW2A and TOW2B missiles since they are RADHAZ safe.

1.1.3.14 WALLEYE. The WALLEYE is a guided glide bomb designed to be delivered on a surface target from an attack aircraft. It is used primarily against targets such as fuel tanks, tunnels, bridges, radar sites, port facilities, and ammunition depots. The weapon system consists of the weapon, the attack aircraft, the AN/AWW-9B data link pod, and the OK-293/AWW control group. The WALLEYE is unique in that it has no propulsion section and must rely on its

ability to glide to the target after release from the aircraft. There are three basic series of the WALLEYE weapon:

a. The original WALLEYE I Extended Range Data Link (ERDL) utilizes a tone data link system while the newer version utilizes the differential phase shift keyed digital data link, designed to prevent signal jamming.

b. The WALLEYE II and WALLEYE II ERDL are greater in diameter, length, and weight than the WALLEYE I ERDL weapons.

c. The ERDL weapon provides distinct advantages over the standard WALLEYE. With the ERDL version, the added data link permits the weapon to continue to send a video target display from launch of the weapon until target impact. The data link further allows the controlling aircraft to control the weapon in flight and to either retarget or redefine the target aim point. The controlling aircraft can be the launching aircraft or a second aircraft equipped with a data link pod (AN/AWW-9B).

1.1.3.15 JSOW. The JSOW is a family of low-cost, air-to-ground weapons which employ a Global Positioning System (GPS) aided inertial guidance system and a kinematically efficient airframe. The JSOW has an inherent range capability for the Navy, Air Force, and Marine Corps, that satisfies the stand-off requirements for attacking interdiction targets from outside enemy point defenses during day, night and adverse weather conditions. JSOW is intended for use on a wide range of aircraft, including the F-18C/D utilizing the BRU-32A/A on stations 2,3,7, and 8. There are currently three configurations of the JSOW vehicle: AGM-154A, AGM-154B, and AGM-154C. All weapon variants are inexpensive, unpowered, and survivable. For payload delivery, they are carried aloft by a host of aircraft and launched to the target area from a Stand-off Outside Point Defense (SOPD). The AGM-154A carries BLU-97 bomblet type warheads for use against soft area targets. The AGM-154B integrates the Sensor Fuzed Weapon's (SFW's) BLU-108 submunition payload into the AGM-154A weapon to meet the Air Force and Navy requirement to deliver an infrared (IR) seeking, explosively formed penetrator submunition at stand-off ranges against moving land combat vehicles. The AGM-154C variant incorporates an affordable seeker, a man-in-the-loop (NITL) data link capability, and a BLU-111 submunition into a AGM-A air frame, to strike harder/point targets and enhance overhaul mission effectiveness.

1.1.4 Maintenance Philosophy. The air launched missile maintenance philosophy is based on the all-up-round maintenance concept and utilizes the three-tiered maintenance structure described in volume I chapter 1.2. Maintenance processes are designed to achieve each individual air launched missile system's asset readiness objective estab-

lished by the Chief of Naval Operations. The objective of the processes is to achieve and maintain established asset readiness objectives with the optimum use of manpower, material, and fiscal resources.

1.1.5 Air Launched Missile (ALM) Inventory Management. The ALM inventory for maintenance purposes is segregated and managed as three categories: Operational Stocks (OS), Stored Ashore Stocks (SAS) and Contingency Retention Stocks (CRS).

1.1.5.1 Operational Stocks (OS). OS is afloat ship ordnance loads plus NON-Combat Expenditure Allowance (NCEA). Afloat ship ordnance is the quantity of stocks aboard deployed and Maritime Prepositioning Force (MPF) ships reported in Conventional Ammunition Integrated Management System (CAIMS), plus 2 additional Carrier Battle Group/Amphibious Ready Group (CVBG/ARG) loads to compensate for downloaded ships. NCEA quantities are authorized by Chief of Naval Operations (CNO) (N411).

1.1.5.1.1 OS Replenishment. Attrition from OS due to NCEA expenditures and other losses will be filled by the Naval Ammunition Logistics Center (NALC) inventory manager in the following decision sequence: (1) new production assets or, (2) CRS or (3) SAS as required.

1.1.5.2 Stored Ashore Stocks (SAS). SAS is Non-Nuclear Ordnance Requirements (NNOR) minus OS ($SAS = NNOR - OS$). SAS maintenance requirements will be determined by the Quality Evaluation (QE) program and approved by Program Managers and CNO (N78).

1.1.5.2.1 SAS Sentencing. Weapons with expired Service In Service Time (SIST) that have been stored in a magazine ashore and show no signs of deterioration may be sentenced to the appropriate Ready For Issue (RFI) condition code and placed in SAS. There is no requirement for testing of these Air-Launched Missile (ALM) prior to transfer to SAS. Assets that have been captive flown since their last maintenance cycle, exhibit visible deterioration, or are in containers that are unsealed are not transferable to SAS. These weapons should remain in OS until expiration of the Maintenance Due Date (MDD), at which time they should be downgraded and retrograded to a designated repair site for inspection and test.

1.1.5.2.2 SAS Sampling Plans. All weapons systems will be monitored through periodic sampling. Samples will be selected from SAS and included in the overall stockpile reliability evaluation. The sample sizes and responsibilities will be addressed in the Stockpile Reliability Program (SRP) for each system.

1.1.5.3 Contingency Retention Stocks (CRS). CRS is defined as in-bin inventory minus the NNOR. When in-bin

inventory exceeds NNOR, No funds will be provided to maintain CRS assets. CRS category provides visibility and accounting of assets until future disposition actions have been completed. Generally, these assets are set aside by the program manager/APML and reviewed for OS replenishment, cross levelling, foreign military sales sales, expenditure, demil and disposal.

1.1.5.4 Inventory Administration. NAVSUP P-724 provides administrative procedures for inventory reporting.

1.1.5.5 Modification/Modernization

1.1.5.5.1 OS. Technical directive implementation to accomplish modification and modernization, with the exception of safety-related issues, will normally be accomplished as OS are returned for scheduled maintenance or as directed by the program office.

1.1.5.5.2 SAS. Since scheduled maintenance cycles may not apply to assets in SAS, funding and forecasting of Engineering Change Proposals (ECPs) and technical directive compliance must be addressed by COMNAVAIRSYSCOM during ECP, technical directive development and review processes.

1.1.5.6 New Production/Warranties. New production ALM will be placed into OS. When the ALM systems reach the OS target level, older assets that are out of warranty, or near warranty expiration, will be transferred to SAS.

1.1.6 Asset Readiness Objective. The Chief of Naval Operations establishes an asset readiness objective for each air launched missile system based on the Non-Nuclear Ordnance Requirements (NNOR) model, developed in accordance with OPNAVINST 8011.9A (NOTAL). The asset readiness objective, fleet operational requirements and ship fill requirements are the goals to be achieved and maintained by the Naval Ordnance Maintenance Management Program. Asset readiness is expressed as the ratio (in percentage) of serviceable assets, not in the maintenance pipeline, to the total number of assets in the inventory. The Chief of Naval Operations monitors asset readiness, and mission readiness (reference volume I, paragraphs 2.1.4 and 2.1.5) for each individual system.

1.1.7 All-Up-Round Air Launched Missile. An all-up-round air launched missile is defined as either:

a. A missile which is provided to the fleet as a complete assembly in its end item configuration; or,

b. A missile which is provided as a complete assembly in its end item configuration, but which requires wing and/or fin installation by the user due to container constraints.

1.1.8 All-Up-Round Maintenance Concept. The all-up-round missile maintenance concept is a maintenance methodology designed to accommodate the processing of all-up-round air launched missiles throughout the logistics cycle. The objectives of the all-up-round maintenance concept are:

a. To issue fully assembled missiles to the fleet which require minimal checkout or test.

b. To effect improvements in air launched weapons handling and storage throughout the logistics sequence.

c. To effect major decreases in weapon strikedown and strikeup operational times.

d. To improve aircraft rearming rates.

1.1.9 All-Up-Round Test Concept. The all-up-round missile test concept is a maintenance methodology designed to assess specific operational parameters of the all-up-round (AUR) missile as the final maintenance action, performed in the configuration which will be forwarded to the user. The AUR test is intended to verify compliance with test specification parameters and provide an acceptable degree of assurance that only weapons with a high probability of success are issued to the operating forces.

1.1.9.1 Proximity Test. Proximity testing is defined as the maintenance testing of an assembled all-up-round weapon, or its individual components, without the requirement or necessity for personnel to use protective enclosures as physical protection from explosive hazards.

1.1.9.2 Safety approval for proximity testing is issued by the weapon system explosive safety review board (WSESRB), in accordance with NAVSEAINST 8020.6C (NOTAL). Safety approval for proximity testing is granted by the WSESRB for individual commodities and equipment configurations at specified locations.

1.1.9.3 Proximity testing is approved for the following systems:

WALLEYE (AGM-62)	AN/DSM-96B
HARM (AGM-88)	AN/DSM-160 /
	AN/GSM-396A
AMRAAM (AIM-120)	AN/GYQ75A(V)2
MAVERICK (AGM-65)	TTU-519E
JSOW (AGM-154)	CMBRE

1.1.9.3.1 Implementation of proximity testing is contingent upon the update of pertinent technical manuals and industrial processing guides to reflect (1) that the missile is approved for proximity testing and (2) proximity testing procedures for the specific models of the missile and its test set are incorporated.

1.1.10 Deep Stowage Concept. Deep stowage is a means of protecting the all-up-round missile. The objective of deep stowage is to maintain assets in their highest state of readiness until needed to support operational requirements. Deep stowage describes assets when they are stored in a protected environment. Assets stored under such conditions normally remain in their shipping containers with weapon station seals intact. Deep stowed assets are protected from degradation caused by day-to-day exposure to the environment, thereby providing the highest confidence level that they will accomplish their intended mission. In order to meet the highest confidence level, a missile must meet the following criteria:

- a. Deep stowed in an undamaged container with one or more traceable seals intact.
- b. No restriction Notice of Ammunition Reclassification (NAR) on use of missiles or components.
- c. Missile is within serviceable period.
- d. Serial numbers on Code A, Material Condition tag/label match the serial numbers on the containers.

1.1.10.1 Deep Stowage (Afloat). Assets are classified as deep stowed for as long as they:

- a. Remain in their shipping containers and are stored below deck in magazine spaces which are in accordance with NAVSEA OP 4 (Ammunition Afloat).
- b. Have been removed from their shipping containers and stored in ready service magazines below deck until they are required for the strike up, but have not been loaded on an aircraft.

1.1.10.2 Deep Stowage (Ashore). Assets are classified as deep stowed for as long as they remain in their shipping containers and are stored in a protected environment in magazines which are in accordance with NAVSEA OP 5 Volume I and NAVSEA 020-AC-SAF-010 (Ammunition Ashore).

1.1.11 Missile Presentencing Inspection. The missile presentencing inspection is designed to take maximum advantage of air launched missile Maintenance Due Dates (MDD). The MDD is the date an air launched missile or component must be returned to a naval airborne weapons

maintenance unit or naval weapons station for testing. The MDD is established by adding Serviceable In Service Time (SIST) to the latest test date, but may not exceed the date that an internal component's service life will expire. The SIST is that period of time an air launched missile may remain in operational use and/or storage before its internal electronic or mechanical components require a test or maintenance action to validate suitability for operational use. The SIST clock starts with the Date of the Last Test (DOLT) performed by an authorized activity. Service life is the period of time a missile explosive component may remain in operational use and/or storage. The service life starts with the date of manufacture. Missiles failing the missile presentencing inspection are returned for required repair actions before reissue. Missile presentencing inspection process is described in chapter 1.3. Procedures for conducting presentencing operations are outlined in appendix J.

NOTE

Most reporting systems allow for only a month/year field for the MDD. The MDD will expire on the last day of the month, after the Date of Last Test (DOLT) plus SIST is calculated.

1.1.12 Missile Sentencing Inspection. A missile sentencing inspection is a visual external examination (screening) of complete missile rounds and components offloaded from a ship or otherwise returned to a naval airborne weapons maintenance unit or naval WPNSTA. A missile sentencing inspection can be performed in operating buildings, segregation facilities, waterfront piers, or in any approved inspection area permitted by NAVSEA OP 5 Volume I and NAVSEA 020-AC-SAF-010. Missile sentencing inspection procedures have been developed for each individual missile series and are contained in NAVSUP P-805, NAVSUP P-807 and TW800-AA-MMI-010/ ALM-IPG (NOTAL). See para 1.1.5.2.1 SAS sentencing for deep stow.

1.1.13 All-Up-Round Pipeline. Figure 1-1-2 is a simplified block diagram that depicts the flow of all-up-round missiles and related air launched missile sections from acquisition through final expenditure. A brief discussion of the pipeline follows:

1.1.13.1 The COMNAVAIRSYSCOM procurement strategy for missiles varies. In some cases COMNAVAIRSYSCOM procures air launched missiles as all-up-rounds and in others they procure air launched missile sections and components from a vendor or multiple vendors. Upon COMNAVAIRSYSCOM acquisition of all-up-round air launched missiles, they are shipped directly from the vendor to a storage point where they are entered into the Navy supply system and are ready for fleet issue. Upon COMNAVAIRSYSCOM

acquisition of air launched missile sections, they are shipped to a Weapons Station (WPNSTA) or other integration activities for assembly and testing personnel inspect and test the all-up-round (AUR) missiles or sections on certified test equipment to verify compliance with test specification parameters. Sections successfully meeting test requirements are then placed in AUR containers which are marked, tagged, and sealed. If applicable, a Maintenance Due Date (MDD) is established at this time. The missiles are then stored or issued, and tracked through the Conventional Ammunition Integration Management System (CAIMS).

1.1.13.2 All-up-round missiles issued to the fleet remain under fleet commander in chief cognizance until expenditure, the MDD is due, SIST expires, service life expires, or malfunction occurs. With the exception of those all-up-round missiles that are required to satisfy operational requirements, the all-up-round missiles normally remain containerized and are placed in deep stowage. Through the use of missile presentencing inspections, missiles meeting ready for issue criteria will remain available for redeployment or shipped to storage awaiting issue.

1.1.13.3 When a fleet-issued all-up-round missile becomes non ready-for-issue because the MDD is due, service life expires, or malfunction occurs, it is returned to a maintenance facility for repair or recertification. Missiles that are Organizational to Depot Level maintenance (O to D) shipped directly to the respective depot. For other missiles, in the Pacific Fleet, the all-up-round missile can be turned in to a naval magazine, Commander, Fleet Activity, naval air station, Marine Corps air station, or naval air facility for shipment to NAVMAG Pearl Harbor, Hawaii, or NAVACTS Guam for further transfer to Naval Airborne Weapons Maintenance Unit One (NAWMU-1) or naval WPNSTA for repair and recertification. If the required repair actions are beyond the capability of NAWMU-1, the all-up-round missile is returned to a west coast naval WPNSTA. In the Pacific Fleet, the all-up-round missile may also be returned directly from the fleet unit to a continental United States naval WPNSTA. In the Atlantic Fleet, all non ready-for-issue all-up-round missiles are returned directly to a continental United States naval WPNSTA. All missile transactions and status changes are reported and tracked through CAIMS.

1.1.13.4 All-up-round missiles returned to a maintenance facility are inspected, tested, and repaired in accordance with the applicable approved procedures. Repaired and recertified all-up-round missiles are again ready for fleet issue. All-up-round (AUR) missiles which fail testing at a naval airborne weapons maintenance unit or weapons station are disassembled (except those under warranty) and the faulty sections and components are transferred to a designated overhaul point for repair. Depot repaired all-up-round mis-

siles are shipped directly from the vendor to a storage point where they are entered into the Naval Supply System and are ready for fleet issue. Depot repaired sections or components are returned to a naval airborne weapons maintenance unit or weapons station where they are inserted available for missile maintenance. Prior to shipment to the designated overhaul point, selected guidance and control sections may be sent to weapons quality engineering for failure verification. Prior to shipment to the designated overhaul points, rocket motors are inspected and screened to reduce the number of rocket motors in the rework pipeline. All-up-round missiles and air launched missile sections and components continue to be tracked in CAIMS throughout the process. Any changes in their configuration or status are reported via transaction item reporting and ammunition transaction reports.

1.1.13.5 Designated overhaul points for air launched missile sections or components may either be weapons support facilities, Army or Air Force Depots, or commercial contractor. Designated overhaul points perform repair and refurbishment actions beyond the capability of a naval airborne weapons maintenance unit or other Intermediate Maintenance Level activities. Section status reporting to CAIMS for depot activities is accomplished via transaction item reporting and ammunition transaction reports.

1.1.14 Assignment of Maintenance Levels and Responsibilities. Figure 1-1-3 provides an overview of air launched missile maintenance actions and the maintenance level to which they are normally assigned. Figures 1-1-4 through 1-1-17 assign maintenance responsibilities prescribed in volume I chapter 2.3 for the air launched missiles listed in paragraph 1.1.3. Maintenance action, peculiar record keeping and reporting requirements are inherently included in these assignments. Selected higher level maintenance actions may be performed at designated lower level maintenance levels when authorized.

1.1.15 Missile Logbooks

1.1.15.1 Logbooks and records are an integral part of air launched missile maintenance. Logbooks accompany each air launched missile and major section and are the administrative means of providing managers with air launched missile age, status, operational history, movement, modification, configuration, and transfer and receipt accounting data. Properly maintained logbooks document each individual air launched missile's operational history, movement, modification, and maintenance actions throughout its life cycle. Air launched missile logbooks serve as the baseline document for this purpose. The COMNAVAIR-SYSCOM Airborne Weapon Analysis and Reporting System at NAVAIRWARCENWPNDIV Point Mugu, CA requires such information for missile system reliability analysis. The Serialized Lot Item Tracking System subsystem of

the CAIMS system at the Naval Ammunition Logistics Center (NALC) Mechanicsburg, PA requires MK, MOD, nomenclature, part number, serial number, national stock number, and naval ammunition logistics code, where applicable, for inventory control. Specific guidelines on the proper logging procedures are included in the air launched missile logbook. References to specific missile logs in appropriate COMNAVAIRSYSCOM technical manuals are superseded by this instruction. Air launched missile logbook entries, or data for subsequent entry into the logbooks, are required at each level of maintenance. Air launched missile logbook entries are required when:

- a. Modification of the air launched missile has been accomplished.
- b. Technical directives such as airborne weapon bulletins and airborne weapon changes have been incorporated.
- c. Maintenance has been performed.
- d. Air launched missile testing has been accomplished including built-in testing.
- e. An age limited component has been replaced.
- f. The extension of all-up-round MDD. Many times the logbook cannot be readily accessed when the all-up-round MDD on the container is updated; therefore, the MDD marked on the container takes precedence over the logbook. It is not necessary to unpalitize a unit pack to mark the new MDD on all sides of the container when a MDD is changed, extended or reestablished. Marking at least one end of the container and updating the DD-129 tag will be sufficient. Complete marking of the container will be accomplished on the next occasion that the unit pack is broken. The latest MDD marking on a container will be used provided that it matches the markings on the DD-129 tag. The logbook should be changed to reflect the more current MDD on the

container at the first available opportunity that does not create additional workload to remove the logbook.

- g. The air launched missile is captive carried.
- h. The air launched missile is expended.

1.1.15.2 The missile logbooks are electronically generated at the All Up Round (AUR) Depots and Naval Airborne Weapons Maintenance Units (NAWMU) and consists of a combined Missile Configuration Summary Form (CSF) and Missile Log Sheet, a logbook cover and any applicable safety tags (see figure 1-1-18). As missiles return for maintenance at either AUR Depots or NAWMUs the combined Missile CSF/Missile History Log will be removed from the logbook and given to the AWARS representative at each site. This will allow for collection of fleet maintenance data. A replacement Missile CSF/Missile History log will be returned to the technician. In the case of missiles that are not currently barcoded, a blank combined form will be returned. For barcoded missiles the CSF portion of the combined form will be filled. The electronic generation of these combined forms will save printing and storage cost and provide an efficient means for collecting fleet maintenance data.

1.1.15.3 The Naval Air Warfare Center Weapons Division, has been designated as the repository for all air launched missile logbook information. Permanent files are periodically updated by maintenance data system input and are kept on each air launched missile. Upon expenditure of the air launched missile, the logbook is sent to the central data collection agency. Activities that receive incomplete or missing air launched missile logbooks and records should contact the originating naval airborne weapons maintenance unit or naval WPNSTA for the logbook and initiate a deficiency report.

NOTE

Missile Configuration Summary/Log Sheet's are not required for HELLFIRE and TOW missiles.

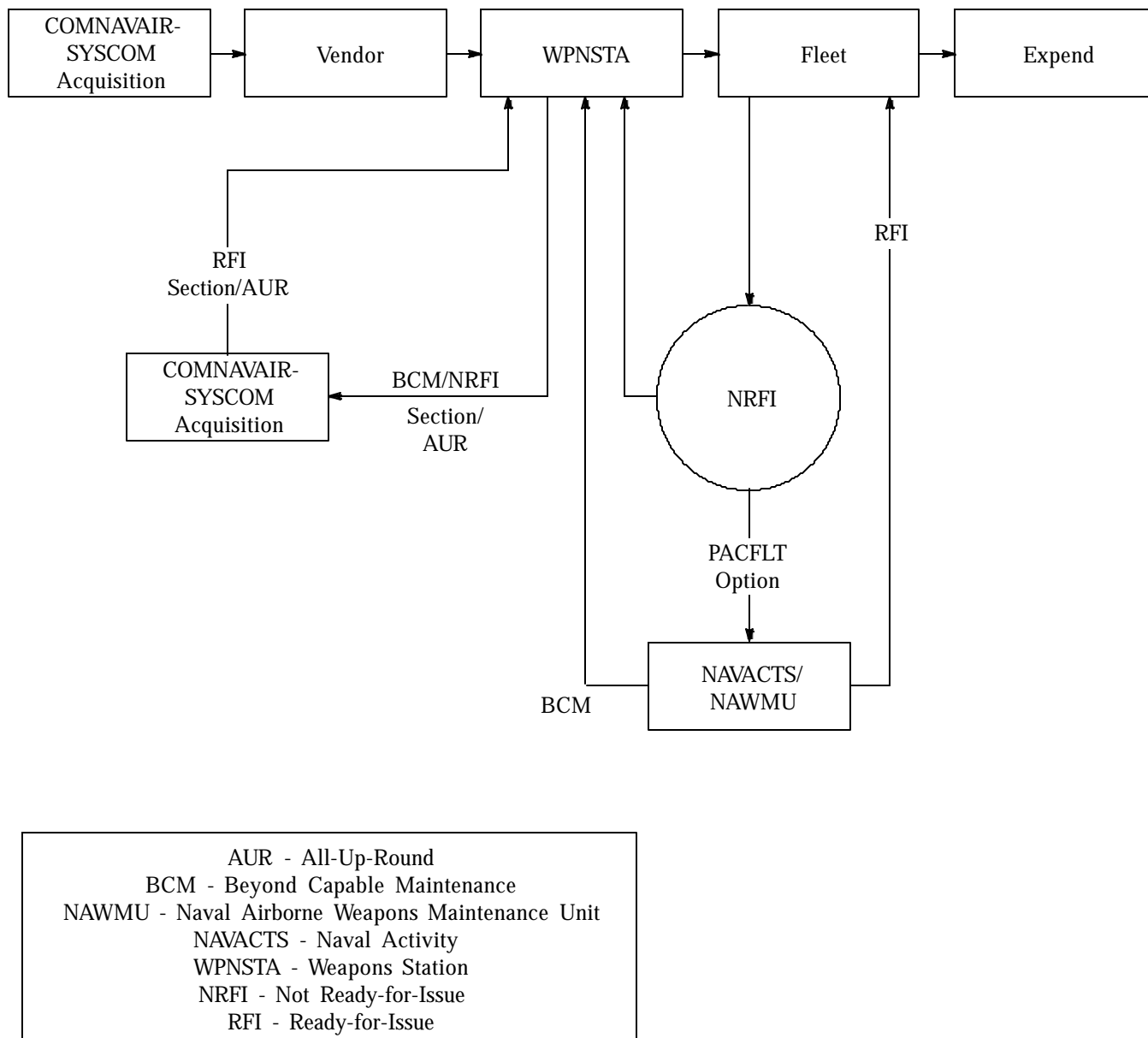


Figure 1-1-2. All-Up-Round Pipeline

Organizational	Intermediate	Depot
<p>Install and remove wings, fins, external parts.</p> <p>Load and download missile on/from aircraft.</p> <p>Perform missile on-aircraft test(s) and built-in test(s).</p> <p>Perform missile pre-flight and postflight inspection.</p> <p>Data entry for Targeting</p> <p>Perform missile re-programming, as required.</p>	<p>Inspect and stow all-up-rounds, containers, and cradles.</p> <p>Inspect and stow external parts.</p> <p>Clean missile and external parts as required. Perform paint touchup and corrosion control.</p> <p>Retorque body joint clamps as required.</p> <p>Remove from/replace in container.</p> <p>Replace container and cradle desiccant only.</p> <p>Selected intermediate maintenance activities are authorized air launched missile assembly or disassembly.</p> <p>Perform missile built-in test and reprogram, as required.</p> <p>All up round and section testing.</p>	<p>Inspect all-up-round.</p> <p>Remove all-up-round and reinstall into container.</p> <p>Inspect and test guidance and control sections or guidance and control groups.</p> <p>Remove and replace section; replace internal and external component only.</p> <p>Inspect, test, replace rocket motor and sustainer. Selected igniter replacement authorized.</p> <p>Inspect, repair, rework, modify warhead, and replace certain components of warhead, safe and arm device, and electronic firing switch.</p> <p>Inspect, test, repair, rework, modify, and replace fuze and target detection device.</p> <p>Inspect, repair, rework, modify, and replace wings and fins.</p> <p>Repair and clean containers and cradles and replace minor container components. Perform major repairs on containers and cradles.</p> <p>Corrosion control, paint, restencil all sections listed above.</p> <p>Inspect, test, repair, rework, and modify guidance and control section or guidance and control group to assembly, subassembly, or component level. Reassemble and perform final system test.</p> <p>Repair, rework, regrain, replace, and modify rocket motor, igniters, and gas generators.</p> <p>All up round and section testing.</p>

Figure 1-1-3. Air Launched Missile Maintenance Levels and Actions

Activity	Level of Responsibility
Squadron	Organizational level maintenance.
CVs (Weapons Department), NAS (Weapons Department), MCAS (Station Weapons), Marine Aviation Logistics Squadron	Intermediate level maintenance.
NAWMU-1	Intermediate level maintenance and forward area test and repair capability.
Weapons Station (WPNSTA) Yorktown	Depot level maintenance. Designated overhaul point for wings, fins, and containers.
Army Depot Letterkenny	Designated overhaul point for guidance and control for AIM RIM-7E, AIM-7F, and AIM/RIM-7M.
Naval Surface Warfare Center Division Crane	Designated overhaul point for batteries.
Naval Surface Warfare Center Division Indian Head	Designated overhaul point for rocket motors, gas generators, and igniters.
Air Weapons and Systems Support Directorate (AWSSD) Yorktown	Quality evaluation, failure verification, and analysis of guidance and control sections, warhead, wings, and fins.
WQE Crane	Quality evaluation, failure verification, and analysis of warhead and S&A.
WQE Indian Head	Quality evaluation of rocket motors, igniters, gas generators, and S&A.

Figure 1-1-4. Assigned Level of Maintenance for SPARROW

Activity	Level of Responsibility
Squadron	Organizational level maintenance.
CVs (Weapons Department), NAS (Weapons Department), MCAS (Station Weapons), Marine Aviation Logistics Squadron	Intermediate level maintenance.
NAWMU-1	Intermediate level maintenance and forward area test and repair capability.
Weapons Station (WPNSTA) Seal Beach Fallbrook	Depot level maintenance for all-up-round.
Weapons Station (WPNSTA) York- town	Depot level maintenance for all-up-round.
Contractor: Raytheon Missile Sys- tems Co.	Depot level maintenance for AUR and sections.
Naval Surface Warfare Center Division Crane	Designated overhaul point for warhead and S&A.
Naval Surface Warfare Center Division Indian Head	Designated overhaul point for rocket motors, gas generators, and igni- ters.
WQE Yorktown	AUR quality evaluation and failure analysis
WQE Indian Head	Quality evaluation of rocket motors, igniters, and gas generators.

Figure 1-1-5. Assigned Level of Maintenance for AMRAAM

Activity	Level of Responsibility
Squadron	Organizational level maintenance.
CVs (Weapons Department), NAS (Weapons Department), Marine Aviation Logistics Squadron, MCAS (Station Weapons), L Class Ships	Intermediate level maintenance.
NAWMU-1	Intermediate level maintenance and forward area test and repair capability.
Weapons Station (WPNSTA) Seal Beach Fallbrook	Depot level maintenance
Weapons Station (WPNSTA) York- town	Depot level maintenance. Designated overhaul point for wings, fins, warheads, and containers.
WPNSTA Seal Beach	Designated overhaul point for containers.
ARMY Depot Letterkenny	Designated overhaul point for AIM-9L/M guidance and control section.
Contractor: Ford Aerospace	Designated overhaul point for AIM-9M guidance and control section.
Contractor: Raytheon	Designated overhaul point for AIM-9M guidance and control section.
Naval Surface Warfare Center Division Crane	Designated overhaul point for target detector and S&A.
Naval Surface Warfare Center Division Indian Head	Designated overhaul point for rocket motors, igniters, and gas generators.
WQE Yorktown	Quality evaluation, failure verification, and analysis for guidance and control section.
WQE Crane	Quality evaluation for target detector and S&A.
WQE Indian Head	Quality evaluation of rocket motors and gas grain generators.

Figure 1-1-6. Assigned Level of Maintenance for SIDEWINDER

Activity	Level of Responsibility
Squadron	Organizational level maintenance.
CVs (Weapons Department), NAS (Weapons Department), MCAS (Station Weapons)	Intermediate level maintenance.
Weapons Station (WPNSTA) Yorktown	Depot level maintenance for AUR, Limited Guidance Section Level Maintenance. Designated overhaul point for warheads, containers, wings and fins.
Weapons Station (WPNSTA) Seal Beach	Designated overhaul point for containers.
Naval Surface Warfare Center Indian Head Division	Designated overhaul point for rocket motors and igniters. Quality evaluation for rocket motors and pyrotechnics.
Naval Surface Warfare Center Indian Head Division Det. Yorktown	Quality evaluation, failure analysis, and engineering investigations of guidance and control sections, warheads, and wings and fins.
Naval Surface Warfare Center Crane Division	Quality evaluation for target detection device and fuzes and batteries.

Figure 1-1-7. Assigned Level of Maintenance for PHOENIX

Activity	Level of Responsibility
Squadron	Organizational level maintenance (AUR).
CVs (Weapons Department), NAS (Weapons Department), MCAS (Station Weapons), Marine Aviation Logistics Squadron	Intermediate level maintenance (AUR).
NAWMU-1	Intermediate level maintenance and forward area test and repair capability.
Weapons Station (WPNSTA) Seal Beach Fallbrook	Depot level maintenance for (AUR). Designated overhaul point for wings and fins and containers.
Weapons Station (WPNSTA) York- town	Depot level maintenance for (AUR). Designated overhaul point for wings and fins and containers.
Contractor: Raytheon Missile Sys- tems	Designated overhaul point for guidance and control sections.
Naval Surface Warfare Center Division Indian Head	Designated overhaul point for rocket motors/warhead.
WQE Yorktown	Quality evaluation, failure analysis, and verification of guidance and control sections.
WQE Indian Head	Quality evaluation of rocket motors warhead.
WQE Crane	Quality evaluation of fusing system batteries and target detectors.

Figure 1-1-8. Assigned Level of Maintenance for HARM

Activity	Level of Responsibility
Squadron	Organizational level maintenance.
CVs (Weapons Department), NAS (Weapons Department), MCAS (Station Weapons), Marine Aviation Logistics Squadron, L Class Ships	Intermediate level maintenance.
Weapons Station (WPNSTA) Seal Beach Fallbrook	Depot level (AUR) maintenance. Repair minor damage to wings and fins.
Weapons Station (WPNSTA) York- town	Depot level (AUR) maintenance. Repair minor damage to wings and fins.
AFLC Ogden	Designated overhaul point for Center Aft Section, Hydraulic Action System.
Army Depot Letterkenny	Designated overhaul point for Guidance and Control Section.
WQE Indian Head	Quality evaluation/assessment of rocket motors.
WQE Crane	Quality evaluation of fusing systems.

Figure 1-1-9. Assigned Level of Maintenance for MAVERICK

Activity	Level of Responsibility
Squadron	Organizational level maintenance.
CVs (Weapons Department), NAS (Weapons Department), MCAS (Station Weapons), Marine Aviation Logistics Squadron, L Class Ships	Intermediate level maintenance.
Weapons Station (WPNSTA) Seal Beach Fallbrook	Depot level maintenance. Designated overhaul point for containers.
Weapons Station (WPNSTA) York- town	Designated overhaul point for warheads.
NAVAIRWARCENWPNDIV China Lake	Designated overhaul point for guidance and control group.
Naval Surface Warfare Center Division Crane	Designated overhaul point for fuze, target detector device, and S&A.
Naval Surface Warfare Center Division Indian Head	Designated overhaul point for rocket motors, ignitors, and gas generators.
WQE Crane	Quality evaluation for fuzes, target detector device, and S&A.
WQE Indian Head	Quality evaluation of rocket motors and gas grain generators.

Figure 1-1-10. Assigned Level of Maintenance for SIDEARM

Activity	Level of Responsibility
Squadron	Organizational level maintenance.
NAS Weapons Department	Intermediate level maintenance
FFG-7 Class Frigates	Intermediate level maintenance.
DD-963 Class Destroyers	Intermediate level maintenance.
Weapons Station (WPNSTA)Yorktown Detachment	Depot level maintenance for missile and special test equipment.
Contractor: Norsk Forsvarsteknologi A/S	Designated overhaul point for missile and missile test equipment.
Contractor: Grumman Aerospace Corp.	Designated overhaul point for missile wings.
WQE Yorktown	Quality evaluation of Seeker/Navigation and Control sections.

Figure 1-1-11. Assigned Level of Maintenance for PENGUIN

Activity	Level of Responsibility
Squadron	Organizational level maintenance.
CVs (Weapons Department), NAS (Weapons Department), MCAS (Station Weapons), Marine Aviation Logistics Squadron	Intermediate level maintenance.
NAVACT Guam	RSSI/MSI
NAVMAG Pearl Harbor	RSSI/MSI
NAWMU-1	RSSI/MSI
Weapons Station (WPNSTA) Yorktown	Intermediate level maintenance. (Designated AUR depot maintenance).
Weapons Station (WPNSTA) Seal Beach	Designated overhaul point for containers, RSSI/MSI
Naval Surface Warfare Center Division Indian Head	Designated overhaul point & I level for cartridge actuated devices and propellant actuated devices. I & D level for CATM's and trainers.
Contractor: Boeing Aerospace	Designated overhaul point for all missile components.
WQE Yorktown	Guidance and Control
WQE Indian Head	Quality evaluation of turbojet engines, (including fuel systems) boosters, rocket motors, cartridge actuated devices, and propellant actuated devices.
WQE Crane	Quality evaluation of fusing systems and warheads

Figure 1-1-12. Assigned Level of Maintenance for HARPOON

Activity	Level of Responsibility
Squadron	Organizational level maintenance.
CVs (Weapons Department), NAS (Weapons Department), MCAS (Station Weapons), Marine Aviation Logistics Squadron	Intermediate level maintenance.
NAVACT Guam	RSSI/MSI
NAVMAG Pearl Harbor	RSSI/MSI
NAWMU-1	RSSI/MSI
Weapons Station Earle (PHST Center)	Designated overhaul point for containers.
Contractor: Boeing Aerospace	Depot level maintenance.
NWSWC Indian Head	Designated overhaul point and I level for cartridge actuated devices and propellant actuated devices. I & D level for CATM's and trainers.
Letterkenny Army Depot	Designated overhaul point for MAVERICK seekers.
WQE Point Mugu	Quality evaluation of AUR and missile peculiar support equipment.
WQE Indian Head	Quality evaluation of turbojet engines, boosters, rocket motors, cartridge actuated devices, propellant actuated devices and fuel systems.
WQE Crane	Quality evaluation of fusing systems and warheads

Figure 1-1-13. Assigned Level of Maintenance for SLAM/SLAM-ER

Activity	Level of Responsibility
Squadron	Organizational level maintenance.
CVs (Weapons Department), NAS (Weapons Department), MCAS (Station Weapons), Marine Aviation Logistics Squadron, L Class Ships	Intermediate level maintenance.
Army Depot Anniston	Designated overhaul point for All-Up-Round (AUR), and faulty sections.
Contractors: the Limited Liability Company (LLC)	Primary Manufacture for All-Up-Round (AUR), HELLFIRE II
WQE Crane	Quality evaluation of fusing systems/warheads.
Marine Corps Program Department, U. S. Army Aviation & Missile Command	Quality evaluation for the AUR, Seeker, Guidance, Control and Propulsion Sections

Figure 1-1-14. Assigned Level of Maintenance for HELLFIRE

Activity	Level of Responsibility
Squadron	Organizational level maintenance.
CVs (Weapons Department), NAS (Weapons Department), MCAS (Station Weapons), Marine Aviation Logistics Squadron, L Class Ships	Intermediate level maintenance.
Weapons Station (WPNSTA) Yorktown	Depot level maintenance.
Weapons Station (WPNSTA) Seal Beach, Fallbrook	Depot level maintenance. Designated overhaul point for containers.
WQE Yorktown	Quality evaluation, failure analysis for guidance and control section, wings and fins.
WQE Indian Head	Quality evaluation of rocket motors.
WQE Crane	Quality evaluation and failure analysis for fuzes.

Figure 1-1-15. Assigned Level of Maintenance for TOW

Activity	Level of Responsibility
Squadron	Organizational level maintenance.
CVs (Weapons Department), NAS (Weapons Department), MCAS (Station Weapons), Marine Aviation Logistics Squadron	Intermediate level maintenance.
NAWMU-1	Intermediate level maintenance and forward area test and repair capability.
Weapons Station (WPNSTA) Seal Beach Fallbrook	Depot level maintenance for all WALLEYE mods., wings, fins, and containers.
Weapons Station (WPNSTA) York- town	Depot level maintenance for all WALLEYE mods. Designated over- haul point for wings, fins, and containers.
WQE Yorktown	Quality evaluation, failure verification, and analysis for guidance and control section, wings, fins, and containers.
WQE Crane	Quality evaluation, failure verification, and analysis for fuze compo- nents.

Figure 1-1-16. Assigned Level of Maintenance for WALLEYE

Activity	Level of Responsibility
Squadron	Organizational level maintenance.
CVs (Weapons Department), NAS (Weapons Department), MCAS (Station Weapons), Marine Aviation Logistics Squadron	Intermediate level maintenance.
Contractor: Raytheon	Depot Level Maintenance

Figure 1-1-17. Assigned Level of Maintenance for JSOW

SPARROW
CONFIGURATION and OPERATING LOG

DESIGNATION:

SERIAL NUMBER:

PART NUMBER:

**THIS LOG TO ACCOMPANY THE MISSILE UNTIL FIRED
OR OTHERWISE EXPENDED, THEN RETURN TO:**

**COMMANDER
NAVAL AIR WARFARE CENTER WEAPONS DIVISION
CODE 362300 (AWARS)
575 I Avenue, Suite 1
POINT MUGU, CA 93042-5049**

**INSTRUCTIONS FOR USE OF THE
MISSILE CONFIGURATION AND OPERATING LOG FOLDER
AND COMPLETION OF THE MISSILE HISTORY LOG SHEET**

A. Missile Configuration and Operating Log Folder Handling Instructions.

1. The Missile Log Folder contains all required records that must travel with this missile and provides instructions for completion of the Missile history Log Sheet. The Log Folder shall contain the following documents/forms:
 - (a) The combined Missile Configuration Summary Form (CSF) and Missile History Log OPNAV Form 8600/10
 - (b) Test records (as required)
 - (c) Explosive Safety Tags (as required)
2. The Missile Log Folder will be initiated by the Missile Contractor. Replacement folders shall be initiated by the All Up Round (AUR) Depots (i. e. WPNSTA) or the Missile contractor whenever the missile designation or part number on the front cover changes or the folder is too worn for use.
3. The missile designation, serial number, and part number on the front cover shall be the same as that on the Missile CSF.
4. To prevent loss of documents from the Log Folder, staple all tests records and explosive safety tags to the inside of the back cover.
5. Replacement Log Folders and combined Missile CSF and Missile History Log sheets can be generated electronically at AUR Depots and NAWMU-1
6. After the missile is expended in any manner, the entire Log Folder shall be forwarded to:

**COMMANDER
NAVAL AIR WARFARE CENTER WEAPONS DIVISION
CODE 362300 (AWARS)
575 I Avenue, Suite 1
POINT MUGU, CA 93042-5049**

Figure 1-1-18. Sample Missile Configuration Summary/Log Sheet

(STAPLE DOCUMENTS HERE)

B. Completion Instruction for Missile History Log Sheet:

1. The Missile History Log Sheet is used to record and collect all events in the life of this missile. In order to obtain accurate information on missile usage, reliability and maintainability, all events in a missiles deployment should be chronologically recorded on the Missile History Log Sheet in accordance with the following instructions:

<u>BLOCK NUMBER</u>	<u>DATA ELEMENT</u>	<u>COMPLETION INSTRUCTIONS</u>
A.	Missile Designation	Fill in blanks to indicate the current designation of the missile. For barcoded missiles this will be automatically entered.
B.	Serial Number	Enter the Complete Missile Serial Number as shown on the hardware. For barcoded missiles this will be automatically entered.
C.	Part Number	Enter the complete Part Number of the missile. For barcoded missiles this will be automatically generated.
1.	Date	Enter the date of all events/operations in YYMMDD format.
2.	Activity UIC	Enter the Unit Identification Code (UIC) for the activity performing the operation (do not use names, hull numbers, etc.)
3.	Operations/Event	Enter the code for each operation performed, using the table at the end of these instructions.
4.	Test/Inspection Result	Enter the result (PASS/FAIL) of all test and inspections performed. If results is FAIL, enter block 7 narrative to describe all failures and any maintenance done to the missile.
5.	Captive Flight/Missile Ready Time (for CAPFLT/READY is entered in block 3)	(a) Captive Flight Time (Air launched configuration only): Enter in hours and tenths the duration of all captive flights. (b) Missile Ready Time (for TARTAR and CAP/CAN Configurations): Enter the power on time in hours and tenths that a missile is in active state (i. e. power on) on launcher or in a tube or canister.
6.	Tech Dir/MOD	Enter the designation and number of all Technical Incorporated Directives or Bulletins performed. (This includes AWC, AWB, AWCAPS, NARs, ETC)
7.	Remarks	Enter all pertinent text remarks needed to fully describe all operations performed. Enter any special details as indicated on Operation/Event Code Table below.

<u>OPERATION/EVENT</u>	<u>OPERATION/EVENT CODES</u> (enter in Block 3)	<u>ADDITIONAL DATA TO BE ENTERED IN</u> <u>REMARKS (Block 7)</u>
Receipt/Onload of Missile	REC	UIC of activity from, if known
Shipment/Off-Load of Missile	SHIP	UIC of activity shipped to, if known
Inspection of Missile INSP	Details of failures if any maintenance is	
Missile BIT Test	BIT	Type of failure, type of BIT performed. Indicate PASS/FAIL in Block 4 for each BIT performed. If BIT provides failed BIT step number, enter in Block 7.
Missile Loaded on Launcher	UPLOAD	Indicate Launcher serial number and rail number.
Missile Removed from Launcher	DOWNLOAD	Indicate any failures.
Missile Captive Flown	CAPFLT	Indicate number of CATS/TRAPS and BOLTERS (Air Launch Only).
Maintenance Due Date Extended	MDD	Indicate directive (i. e. MSG DTG) authorizing MDD extension and date MDD was extended to.
Missile Activated on Launcher	READY	
Technical Directives Incorporated	MOD	Indicated MOD Kit P/N & S/N if applicable. If bulletin requires PASS/FAIL indication, enter in Block 4, any quantitative information request (i. e. #CC, color, time, etc.) in Block 7.
Missile Firing Attempts	ITL	If missile not launched, enter reason.
Missile Expenditure	EXPEND	Indicate type/reason for expenditure (i.e. launch, lost, destroyed, etc.)
Maintenance on Missile	MAINT	Indicate type of maintenance performed and result.
Any other Operation/Event not	OTHER	Describe Operation/Event covered above

Distribution of Missile CSF/Missile Log Sheet: Upon receipt of missile at shore AUR Depot (WPNSTA) activity or NAWMU-1, remove the Missile CSF/Missile Log Sheet and give to AWARS representative. Anew Missile CSF/Missile Log Sheet will be generated by AWARS personnel for inclusion in the Missile Log Book.

Figure 1-1-18. Sample Missile Configuration Summary/Log Sheet (Cont'd)

[illegible]

Figure 1-1-18. Sample Missile Configuration Summary/Log Sheet (Cont'd)

SPARROW MISSILE LOG SHEET				A. MISSILE DESIGNATOR	B. SERIAL NUMBER	C. PART NUMBER
1. DATE (MM/DD/YY)	2. ACTIVITY UIC	3. OPERATION/ EVENT	4. TEST/INSP. RESULT (PASS/FAIL)	5. CAPTIVEFLIGHT MISSILE READY TIME	6. TECH DIR MOD INCORPORATED	7. REMARKS

The SPARROW Missile Log Sheet is to be completed in accordance with the instructions printed on the inside of the SPARROW Configuration and Operating Log Folder. Intermediate Level Maintenance activities shall enter receipt of a Fleet-Return Missile, copy all Missile Log Sheets and forward to AWARS. When the Missile is expended in any manner, this should be indicated on the SPARROW Missile Log Sheet and the entire Missile Log Folder should be forwarded to: Commander, Naval Air Warfare Center Weapons Division, Attn: Code 362300E (AWARS), 575 I Avenue, Suite 1, Point Mugu, CA 93042-5049

Figure 1-1-18. Sample Missile Configuration Summary/Log Sheet (Cont'd)

CHAPTER 1.2

Organizational Level Maintenance

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CHAPTER 1.2

Organizational Level Maintenance

1.2.1 General. This chapter describes the air launched missile maintenance actions authorized to be performed by Navy and Marine Corps squadrons as prescribed in volume I chapter 2.3 of this manual. Organizational level maintenance directly supports and maintains the aircraft weapon system, which consists of the aircraft, air launched missile, and associated interface items.

1.2.2 Organizational Level Maintenance Responsibilities. The air launched missile organizational level maintenance is that maintenance which is performed by Navy and Marine Corps squadrons on a day-to-day basis in support of its operations. Figure 1-2-1 assigns the organizational level maintenance actions performed on the air launched missiles listed in chapter 1.1. Maintenance actions are described generally in paragraphs 1.2.2.1 through 1.2.2.15. All maintenance actions are performed in accordance with the approved Naval Air Systems Command technical manuals, loading manuals, and checklists which have been developed for each air launched missile system and launch platform.

1.2.2.1 Release and Control System Check. Organizational level aviation ordnance technicians (Marine) and/or Integrated Weapons Team (IWT) (Navy) members perform release and control checks on aircraft. Checks must be performed prior to missile loading, after configuration of the aircraft, where connections have been unmated and mated, and after any malfunction in the release and control system. For specific procedures, consult the applicable authorized airborne weapons and stores loading manual and checklist.

1.2.2.2 Aircraft Preparation and Inspection. Aircraft preparation and inspection is a step-by-step procedure which must be performed prior to loading. During preparation and inspection, organizational level aviation ordnance personnel ensure that the aircraft is properly positioned and grounded. Impulse cartridges are removed from all weapon stations and armament switches are placed in the off, safe, or normal positions. Discrepancies must be corrected before the loading evolution can proceed. Individual aircraft procedures are specified in the applicable authorized airborne weapons and stores loading manual and checklist.

1.2.2.3 Missile Receipt and Inspection. Organizational level aviation ordnance personnel inspect each missile prior to loading to ensure integrity. Missiles are inspected for dents, cracks, proper mating, and security of the assembly. Motor fire receptacles must be inspected to ensure that they have dust covers and are clean and undamaged. Wings and fins must be inspected for dents, cracks, distortions, corrosion, and proper component operation. Missiles which do not meet inspection criteria should be rejected and the supporting intermediate maintenance activity notified.

1.2.2.4 Missile Preparation for Loading. After receiving the missile and ensuring proper operational configuration, the missile is prepared for loading. Procedures vary depending on the aircraft type, the missile type, and the aircraft station to be loaded. However, general preparation consists of wing and fin installation when applicable and removal of dust covers. Specific procedural responsibilities are outlined in the applicable authorized airborne weapons and stores loading manual and checklist.

1.2.2.5 Aircraft Station Preparation. Organizational level aviation ordnance personnel prepare each aircraft station that will be loaded. Preparation consists of readying the bomb rack or launcher to receive a missile or missile and launcher combination. Refer to the applicable authorized airborne weapons and stores loading manual for actual procedures.

1.2.2.6 Missile Loading. During missile loading, organizational level aviation ordnance personnel install airborne weapons and stores on an aircraft. Loading evolutions are performed within a designated loading and rearming area in accordance with the authorized airborne weapons and stores loading checklist. Refer to the applicable aircraft airborne weapons and stores loading manual and checklist for specific loading procedural requirements.

1.2.2.7 Postload Quality Assurance Inspection. A certified quality assurance inspector performs an inspection of the missile and the aircraft interface after the loading operation has been completed. The inspection ensures that missiles have been loaded properly and that all procedural steps have been performed correctly.

	1.2.2.1 Release/ Control System Check	1.2.2.2 Aircraft Prepara- tion/ Inspection	1.2.2.3 Missile Receipt/ Inspection	1.2.2.4 Missile Prepara- tion for Loading	1.2.2.5 Aircraft Station Prepara- tion	1.2.2.6 Missile Loading	1.2.2.7 Postload Quality Assurance Inspection	1.2.2.8 Testing
SPARROW	X	X	X	X ₂	X	X	X	X ₃
AMRAAM	X	X	X	X ₂	X	X	X	X ₄
SIDEWINDER	X	X	X	X	X	X	X	X ₃
PHOENIX	X	X	X	X ₂	X	X	X	X _{4,7}
HARM	X	X	X ₁	X	X	X	X	X ₄
MAVERICK	X	X	X ₁	X	X	X	X	X ₈
SIDEARM	X	X	X	X	X	X ₂	X	X ₃
JSOW	X	X	X	X	X	X	X	X ₄
PENGUIN	X	X	X	X	X	X ₂	X	X
HARPOON	X	X	X	X	X	X ₂	X	X _{5,6}
SLAM/ SLAM-ER	X	X	X	X	X	X ₂	X	X ₆
HELLFIRE	X	X	X	X	X	X	X	X ₄
TOW	X	X	X	X	X	X	X	X
WALLEYE	X	X	X	X	X	X	X	X _{9,10}
Notes 1. Missiles are delivered as preloaded accessory suspension equipment. 2. Attach wings and fins in accordance with the applicable authorized loading manual. 3. Perform a missile on-aircraft test in accordance with the applicable authorized loading checklist. 4. Perform a built-in test on missiles after loading in accordance with the applicable authorized loading checklists. 5. On surface ships and submarines, perform a built-in test on HARPOON missiles as follows: conduct built-in test after (a) every unload; (b) every 6 months after onload; (c) 2 weeks prior to deployment. 6. At Naval Air Stations and CVs, perform a built-in test as part of aircraft and missile loading during preflight checks. 7. Perform a built-in self test on PHOENIX AIM-54C missiles only in accordance with the applicable authorized loading checklist. 8. Perform a laser tracking test on MAVERICK AGM-65E missiles only in accordance with the applicable authorized loading checklist. 9. Perform a crab/track check after loading in accordance with the applicable authorized loading checklist. 10. Perform video tracking and transmitter tests. 11. Arming is limited to the removal of bomb rack safety pins.								

Figure 1-2-1. Organizational Level Operational and Maintenance Requirements

	1.2.2.9 Missile Arming	1.2.2.10 Missile Dearming	1.2.2.11 Postop- erational Inspection	1.2.2.12 Missile Down- loading	1.2.2.13 Discrepan- cy Reporting	1.2.2.14 Technical Directives	1.2.2.15 Logbook Update
SPARROW	X	X	X	X	X	X	X
AMRAAM			X	X	X	X	X
SIDEWINDER	X	X	X	X	X	X	X
PHOENIX	X	X	X	X ₂	X	X	X
HARM	X	X	X	X	X	X	X
MAVERICK	X	X	X	X	X	X	X
SIDEARM	X	X	X	X	X	X ₂	X
JSOW	X	X	X	X	X	X	X
PENGUIN	X	X	X	X	X	X ₂	X
HARPOON	X ₁₁	X	X	X	X	X ₂	X
SLAM/ SLAM-ER	X	X	X	X	X	X	X
HELLFIRE	X	X	X	X	X	X	
TOW		X	X	X	X	X	
WALLEYE	X ₁₁	X	X	X	X	X	X
Notes 1. Missiles are delivered as preloaded accessory suspension equipment. 2. Attach wings and fins in accordance with the applicable authorized loading manual. 3. Perform a missile on-aircraft test in accordance with the applicable authorized loading checklist. 4. Perform a built-in test on missiles after loading in accordance with the applicable authorized loading checklists. 5. On surface ships and submarines, perform a built-in test on HARPOON missiles as follows: conduct built-in test after (a) every unload; (b) every 6 months after onload; (c) 2 weeks prior to deployment. 6. At Naval Air Stations and CVs, perform a built-in test as part of aircraft and missile loading during preflight checks. 7. Perform a built-in self test on PHOENIX AIM-54C missiles only in accordance with the applicable authorized loading checklist. 8. Perform a laser tracking test on MAVERICK AGM-65E missiles only in accordance with the applicable authorized loading checklist. 9. Perform a crab/track check after loading in accordance with the applicable authorized loading checklist. 10. Perform video tracking and transmitter tests. 11. Arming is limited to the removal of bomb rack safety pins.							

Figure 1-2-1. Organizational Level Operational and Maintenance Requirements (Cont'd)

1.2.2.8 Testing. Organizational level aviation ordnance personnel perform missile tests after loading to ensure proper interface between the aircraft and the missile. Missile on-aircraft tests, built-in tests, or built-in self tests are performed on missiles to improve confidence that the weapon, as well as the launch platform, will function properly. Procedures for testing are contained in the applicable authorized aircraft airborne weapons and stores loading manual. Personnel aboard ships employing air launched missiles in surface launched modes perform built-in test or daily system operational tests.

1.2.2.9 Missile Arming. Arming is that operation which changes the missile from a safe condition to a state of readiness for initiation. During arming, organizational level maintenance personnel remove bomb rack and missile launchers safety pins and perform any other physical changes necessary to complete arming, such as flipping safe and arm switches. These functions shall be performed in an authorized arming area utilizing the arming and safing hand signals contained in the applicable aircraft loading manual, chapter 6.1 of this volume, or the appropriate Shore/CV/Amphibious NATOPS manual.

1.2.2.10 Missile Dearming. Dearming is performed to change a weapon from a state of readiness for initiation to a safe condition. All arming and dearming must be conducted in an authorized arming area utilizing the arming and safing hand signals contained in the applicable aircraft loading manual, chapter 6.1 of this volume or the appropriate Shore/CV/Amphibious NATOPS manual.

1.2.2.11 Post-operational Inspection. Organizational level aviation ordnance personnel perform a post-operational inspection in the dearming area to ensure missile system components are not damaged, loose, or broken. Missiles are checked for visual indications that an unsuccessful launch was initiated, such as discoloration in the vicinity of the battery, leaking electrolyte, or hydraulic fluid leaking. If an unsafe situation is discovered, the proper authority must be notified immediately and the arming crew will initiate emergency procedures.

1.2.2.12 Missile Downloading. Downloading is the process of removing unexpended missiles from the aircraft. It is performed within the loading and rearming area and is con-

ducted in accordance with applicable airborne weapons and stores loading manuals and checklists.

1.2.2.13 Discrepancy Reporting. Discrepancy reports are initiated at the organizational level when a discrepancy is discovered during the performance of any of the assigned organizational level maintenance actions. Discrepancy reporting procedures are contained in Volume I, Chapter 4.6.

1.2.2.14 Technical Directives. Organizational level aviation ordnance personnel are responsible for assuring that notice of ammunition reclassifications, airborne weapon bulletins, and airborne weapon changes directed to that level are complied with.

1.2.2.15 Logbook Maintenance. To facilitate air launched missile logbook maintenance, organizational level personnel are responsible for providing significant missile information, such as captive carry time, damage to the missile, and missile failure or expenditure, to the weapons department for incorporation into the logbooks.

1.2.3 Explosives Handling Personnel Qualification and Certification (Qual/Cert) Program. Organizational level aviation ordnance personnel involved with the maintenance and operational requirements of air launched missiles must be trained, qualified, and certified to perform these maintenance actions in accordance with the requirements of OPNAVINST 8020.14/MCO P8020.11 (NOTAL) or MCO 8023.3 (NOTAL) and applicable type commander instructions.

1.2.4 Maintenance Training Requirements. Maintenance training is a continuous and ongoing process, conducted to ensure that personnel who operate, maintain, and support weapons systems and associated equipments are qualified to perform their respective functions. Formal and on-the-job maintenance training, for air launched missiles processed at organizational level maintenance activities, may be augmented through the use of Engineering Technical Specialists/Fleet Weapons Support Team provided by the Naval Air Warfare Center, Weapons Division, Point Mugu, Ca. Volume I, chapter 4.4 provides procedures for requesting field service training and technical assistance. Volume I, section 6 provides additional information on all aspects of Naval Airborne Weapons Maintenance Training.

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CHAPTER 1.3

Intermediate Level Maintenance

1.3.1 General. This chapter describes the air launched missile maintenance actions assigned to naval air stations, shipboard weapons departments, marine aviation logistics squadrons, and naval airborne weapons maintenance units as prescribed in volume I chapter 2.3 of this instruction. Intermediate level maintenance enhances and sustains the combat readiness and mission capability of supported activities by providing quality and timely air launched missile support at the closest location with the lowest practical expenditure. Naval airborne weapons maintenance units are assigned as units of the operating forces and provide forward area all-up-round air launched missile testing, repair, and recertification. However, the naval airborne weapons maintenance units also perform the same essential functions as the naval weapons stations and in some cases maintenance responsibilities for the two types of establishments overlap. As such, the majority of the maintenance responsibilities for these establishments are assigned in chapter 1.4 of this volume.

1.3.2 Intermediate Level Maintenance Responsibilities. That air launched missile maintenance which is the responsibility of, and is performed by, designated maintenance activities in support of using units. Figure 1-3-1 assigns the intermediate level maintenance actions that are performed on the air launched missiles listed in chapter 1.1. These assigned maintenance actions are described generally in paragraphs 1.3.2.1 through 1.3.2.15. All maintenance actions are to be performed in accordance with the approved Naval Air Systems Command (NAVAIRSYSCOM) technical manuals which have been developed for each air launched missile system. Applicable technical manuals for the missiles described in paragraph 1.3.1 are listed below:

- a. SPARROW, NAVAIR 01-265GMAD-9-4.
- b. AMRAAM, NAVAIR 01-AIM120-2.
- c. SIDEWINDER, NAVAIR 01-AIM9-2.
- d. PHOENIX, NAVAIR 01-AIM54-2.
- e. HARM, NAVAIR 01-AGM88A-2.1.
- f. MAVERICK, AW 820CE-MIB-010 (Laser and Infrared).

- g. SIDEARM, NAVAIR 01-AGM122A-2.
- h. PENGUIN, NAVAIR 11-140-6.2.
- i. HARPOON/SLAM/SLAM ER, AW 820HN-MIB-000.
- j. HELLFIRE, AW 820YB-MIB-000.
- k. TOW, NAVAIR 01-BGM71-1.
- l. WALLEYE, NAVAIR 01-15MGA-3-1; (WALLEYE I); NAVAIR 01-15MGB-3-2 (WALLEYE II).
- m. JSOW, NAVAIR 11-140-6.2

1.3.2.1 Receiving and Inspection. Inspections are conducted on all air launched missile containers or cradles received. Containers are inspected for proper marking and tagging and any possible damage. A container or cradle that is dented, crushed, punctured, or appears to have been tampered with must not be stored without first examining its contents. If the air launched missile is damaged and that damage appears to be the result of damage to the container or cradle, the proper authority shall be notified for appropriate deficiency reporting and disposition instructions.

1.3.2.2 Storage and Handling. Intermediate level maintenance is responsible for air launched missile storage, which includes deep stowage, and ready service storage of air launched missiles issued to the organizational level to satisfy operational requirements. All handling, including strike-down and strikeup, storing, and transporting, will be performed utilizing authorized equipment.

1.3.2.3 Unpackaging Inspection. When the containerized air launched missile is removed from storage and decontainerized in preparation for ready service or delivery to the using activity, an unpackaging inspection is performed. The inspection assures that no damage or moisture intrusion to the air launched missile has occurred during storage. A thorough visual inspection is performed to ensure that the safe and arm mechanism is in the safe position and that no damage or corrosion is evident. Remove the logbook and enter the unpackaging inspection results. Store logbooks of unpackaged units in an accessible area in the missile preparation space until repacking occurs.

	1.3.2.1 Receiving Inspection	1.3.2.2 Storage and Handling	1.3.2.3 Unpack- aging Inspection	1.3.2.4 Cleaning	1.3.2.5 Pres- ervation and Painting	1.3.2.6 Install- ation and Removal of Wings/ Fins	1.3.2.7 PASE Mating	1.3.2.8 Ready Service Inspection
SPARROW	X	X	X3	X	X			X
AMRAAM	X	X	X	X	X			X
SIDEWINDER	X	X	X3	X	X	X		X
PHOENIX	X	X	X3	X	X	X		X
HARM	X	X	X3	X	X	X	X6	X
MAVERICK	X	X	X	X	X		X5	X
SIDEARM	X	X	X3	X	X	X		X
JSOW	X	X	X	X				X
PENGUIN	X	X	X	X				X
HARPOON	X	X	X	X	X	X		X
SLAM/ SLAM-ER	X	X	X	X	X	X		X
HELLFIRE	X	X	X	X	X			X
TOW	X1,2	X	X	X5	X4,5			X5
WALLEYE	X	X	X3	X	X	X		X

Notes:

1. The TOW container consists of a metal tube equipped with a removable end cover.
2. Containers are shipped nine per unit load for basic TOW and 12 per unit load for TOW-2A.
3. Wings and fins may be shipped in separate containers.
4. Since TOW is not removed from the launcher at intermediate level maintenance, cleaning and paint touchup is only accomplished on the launch container.
5. Preservation consists of environmental protection of the launcher only.
6. HARM missiles are mated with the LAU-118 launcher.
7. Perform missile built-in test or reprogramming on JSOW missiles only in accordance with applicable authorized manual.

Figure 1-3-1. Intermediate Level Maintenance Responsibilities

	1.3.2.9 Assembly and Test	1.3.2.10 Discrepancy Reporting	1.3.2.11 Logbook Maintenance	1.3.2.12 Requisitioning	1.3.2.13 Shipping	1.3.2.14 Technical Directives	1.3.2.15 Record Keeping/ Reporting
SPARROW		X	X	X	X	X	X
AMRAAM		X	X	X	X	X	X
SIDEWINDER		X	X	X	X	X	X
PHOENIX		X	X	X	X	X	X
HARM		X	X	X	X	X	X
MAVERICK		X	X	X	X	X	X
SIDEARM		X	X	X	X	X	X
JSOW	X7	X	X	X	X	X	X
PENGUIN		X	X	X	X	X	X
HARPOON		X	X	X	X	X	X
HELLFIRE		X		X	X	X	X
SLAM/ SLAM-ER		X	X	X	X	X	X
TOW		X		X	X	X	X
WALLEYE		X	X	X	X	X	X
Notes: 1. The TOW container consists of a metal tube equipped with a removable end cover. 2. Containers are shipped nine per unit load for basic TOW and 12 per unit load for TOW-2A. 3. Wings and fins may be shipped in separate containers. 4. Since TOW is not removed from the launcher at intermediate level maintenance, cleaning and paint touchup is only accomplished on the launch container. 5. Preservation consists of environmental protection of the launcher only. 6. HARM missiles are mated with the LAU-118 launcher. 7. Perform missile built-in test or reprogramming on JSOW missiles only in accordance with applicable authorized checklists.							

Figure 1-3-1. Intermediate Level Maintenance Responsibilities (Cont'd)

1.3.2.4 Cleaning. Cleaning consists of the removal of contaminants such as dirt, grease, salt spray, oil, and other elements that aid corrosion. Cleaning requires a knowledge of the materials and methods needed to remove each of these contaminants. As a general rule, the mildest cleaning method available that will work effectively is used. The corrosion manual addresses the specific procedures to be followed for each type of metal to be cleaned, as well as the proper material to be used. The corrosion control manual for air launched missiles is NAVAIR 01-1A-75 (Airborne Weapons and Associated Equipment, Consumable Material Applications and Hazardous Material Authorized Use List) (NOTAL). NAVAIR 01-1A-75 addresses the authorized materials, applications, and procedures for preventive and corrective corrosion control measures. Specifically, the corrosion manual addresses the procedures to be followed for each type of substrate to be cleaned, as well as the proper material to be used. See volume I, section 4 for further details.

1.3.2.5 Preservation and Painting. All air launched missiles are subject to preservation and painting procedures as part of intermediate level maintenance. Intermediate level maintenance personnel clean all surfaces before applying the coating, ensuring that no cleaning material residue is trapped in fasteners, points, etc.; these areas can become contaminated and corrosion will occur. While material such as oils and sealants act as a preservative, painting is generally the most effective means of preserving metal. The corrosion manual (NAVAIR 01-1A-75) (NOTAL) lists the cleaning materials, primers, and paints used in the preservation and corrosion control of air launched missiles. Painting is limited to the touchup of areas which have been damaged by abrasion, superficial scratches, or in areas where the paint has been removed in order to treat corrosion. Touchup painting is limited to a maximum of 25 percent of any section or component. Painting requirements that exceed this criterion must be performed at depot level maintenance in an authorized painting area (usually an enclosed paint booth). See Volume I, Section 4, for further details.

1.3.2.6 Installation and Removal of Wings and Fins. To facilitate loading and downloading, many air launched missiles require wings and fins to be installed after the missile is mounted on the suspension and release equipment and removed prior to commencing the downloading evolution. These procedures are specific steps in the loading checklists for each applicable missile. In other applications, intermediate level maintenance personnel install some or all of the missile wings and fins prior to delivery to the user activities.

1.3.2.7 Preloaded Accessory Suspension Equipment Mating. The loading procedures for the AGM-88 HARM, and AGM-65 MAVERICK require the missile launcher (LAU-117A (V)2/A, LAU-118(V)2/A) to be mated to the

missile by intermediate level maintenance personnel prior to delivery to the organizational level. The assembled missile and launcher combination is loaded directly to the aircraft bomb rack.

1.3.2.8 Ready Service Inspection. A ready service inspection is an inspection of an all-up-round missile that has been removed from its container and placed in a ready service magazine prior to issue to a user activity. The inspection is performed by intermediate level maintenance personnel responsible for issuing the all-up-round missile. A ready service inspection consists of inspecting the all-up-round missile for proper configuration, damage, loose or missing components, corrosion, or other conditions that render the all-up-round missile unsafe or hazardous. An all-up-round missile that is determined to be not ready-for-issue shall be rejected and the proper authority notified. Make an entry into the appropriate logbook section describing the not ready-for-issue condition complete with date, activity, and inspection criteria.

1.3.2.9 Assembly and Test. Under the all-up-round missile concept, air launched missile assembly and testing is not normally performed by intermediate level maintenance activities.

NOTE:

Under the Organizational to Depot concept, (i. e. JSOW) Testing (Built-In-Test) and reprogramming may be performed by Intermediate Level activities.

1.3.2.10 Discrepancy Reporting. Discrepancy reports are initiated at intermediate level maintenance when a discrepancy is discovered during the performance of any of the assigned intermediate level maintenance actions. Discrepancy reporting procedures are contained in volume I chapter 4.6 of this instruction.

1.3.2.11 Logbook Maintenance. Intermediate level maintenance is assigned the responsibility for air launched missile logbook maintenance. This assignment includes not only intermediate maintenance actions which require logbook entry, but also those data entries submitted from the organizational level and operational activities.

1.3.2.11.1 In some cases the naval airborne weapons maintenance units or weapons station place the air launched missile logbook in the missile container before attaching the weapons station security seal. In these cases, if the seal is intact, it is not necessary to open the container for logbook removal and the air launched missile can be deep stowed. However, upon removal of the air launched missile from the container, logbook entries are required whenever:

- a. Modification of the air launched missile has been accomplished.
- b. Technical directives such as airborne weapon bulletins and airborne weapon changes have been incorporated.
- c. Maintenance has been performed.
- d. Air launched missile testing has been accomplished.
- e. Shipping or receiving transactions occur.
- f. An age limited component has been replaced.
- g. The air launched missile is captive carried.
- h. The air launched missile is expended.
- i. Any unusual occurrences (e.g. drop, over temperature, battery explosion, etc.).
- j. The all-up-round MDD on the container has been updated and the logbook has not been changed to reflect the update. The MDD on the container takes precedence over the logbook MDD.

1.3.2.11.2 The central data collection agency, Naval Air warfare Center Weapons Division, has been designated as the repository for all air launched missile logbook information. Permanent files are kept on each air launched missile, which are periodically updated by maintenance data system inputs. Upon expenditure of the air launched missile, the logbook is sent to the central data collection agency. Activities receiving incomplete or missing air launched missile logs and records should contact the originating naval airborne weapons maintenance unit or naval weapons station for the logbook, initiate a Quality Deficiency Report and then contact the central data collection agency for the latest update or logbook replacement.

1.3.2.12 Requisitioning. Intermediate level maintenance is responsible for the requisition of air launched missiles in accordance with established allowances. The approved basic stock level of missiles is the quantity required at a naval air station or Marine Corps air station to support all aspects of that activity's mission. The missile mission load allowance is the quantity required by the weapons department aboard the ship to meet the ship's assigned mission. Submit requisitions as provided in the current editions of CINCPACFLTINST 8010.12 (NOTAL) or CINCLANTFLTINST 8010.12 (NOTAL) and NAVSUP P-724 (NOTAL). Requisitions not filled from in-theater (fleet) assets are sent to NAVAMMOLOGCEN Mechanicsburg PA for air launched

missiles and all other conventional ordnance. Requisitions of air launched missiles for allowance replenishment, scheduled training, or deployment loadout must be submitted by naval message or auto in network to Naval Ammunition Logistics Center (NAVAMMOLOGCEN) AMMO Detachment (Code 003), 1832 Gilbert Street, Suite 100, Norfolk VA 23511-3321 or NAVAMMOLOGCEN AMMO Detachment (Code 003), Box 357073, San Diego, CA 92135-7073) not earlier than 90 days but not less than 60 days before the required delivery date. Carriers loading via a cargo ship must use the date when the cargo ship will commence on load, not the underway replenishment date. The required delivery date should be updated as changes occur.

1.3.2.13 Shipping. Prior to shipment, air launched missiles and their associated hardware (including logbooks) which have been decontainerized are returned to their containers and repackaged in accordance with the applicable authorized technical manual. Containers are sealed, marked, and tagged and appropriate Conventional Ammunition Integrated Management System entries are reported.

1.3.2.14 Technical Directives. Intermediate level ordnance personnel are responsible for assuring that technical directives such as notice of ammunition reclassifications, airborne weapon bulletins, and airborne weapon changes directed to that level are complied with.

1.3.2.15 Record Keeping and Reporting. Intermediate level maintenance is responsible for air launched missile record keeping and reporting for both organizational and intermediate level maintenance. This includes air launched missile logbook maintenance and Conventional Ammunition Integrated Management System reporting requirements.

1.3.3 Missile Presentencing Inspection

1.3.3.1 The missile presentencing inspection is designed to take maximum advantage of air launched missile Maintenance Due Dates (MDD) as discussed in paragraph 1.1.11. The missile presentencing inspection is performed onboard the carrier by the weapons department personnel or a missile presentencing inspection team comprised of Naval Air Warfare Center Weapons Division, (NAVAIRWARCENWPN-DIV) Fleet Weapons Support Team (FWST), and ships company Weapons Department personnel.

1.3.3.2 Missile presentencing inspection candidates are identified by the MPI team. The MPI team leader is responsible for the screening of the ship's air launched inventory which is recorded in the Conventional Ammunition Integrated Management System/Serialized Lot Item Tracking files (CAIMS/SLIT). These files indicate the status of the ship's air launched missile inventory.

1.3.3.3 Upon request from the ship or type commander the NAVAIRWARCENWPNDIV, FWST is provided the date and location of the missile presentencing inspection. A missile presentencing inspection plan is developed and the missile presentencing inspection is conducted in accordance with appendix J.

1.3.4 Crossdecking Requirements. Upon completion of the deployment, air launched missiles which meet the following requirements may be transferred (crossdecked) to the relieving ship:

a. Containerized air launched missiles which have been deep stowed and have sufficient time before MDD expiration for the receiving ship to complete its deployment.

b. Ready service missiles that have sufficient MDD time remaining may be crossdecked. The MDD may be extended to meet an operational commitment by requesting an extension as identified in appendix D.

c. AMRAAM, HARM, AIR HARPOON, HELL-FIRE, JSOW, MAVERICK, SIDEARM, SIDEWINDER, SLAM, SLAM ER, SEASPARROW AND AIR SPARROW missiles may be crossdecked unless they fail a built-in test, fail an on aircraft test, experience visible damage, or will reach MDD before the completion of the next deployment. The MDD may be extended to meet an operational commitment by requesting an extension as identified in appendix D.

d. Captive flown missiles may be crossdecked unless they fail a required built-in test, experience visible damage, or will reach MDD before the completion of the next deployment.

e. HARM missiles may be cross decked with the exception of captive flown AGM-88C (NALC PU06/WF22) missiles. The AGM-88C (NALC PU06/WF22) missiles may be cross decked if captive carried less than 250 hours.

f. JSOW has a Cats/Traps Limitation as listed :

1. AGM-154A all NALCs 50 Cats/Traps.
2. AGM-154B all NALCs 50 Cats/Traps.
3. AGM-154C all NALCs 50 Cats/Traps.

JSOW Weapons will be placed in Condition Code "B" when 40 Cats/Traps have been logged

g. JSOW Flight Hour Limitations as listed:

1. AGM-154A all NALCs 300 Hours.
2. AGM-154B all NALCs 300 Hours.
3. AGM-154C all NALCs 300 Hours

1.3.5 Fly-To-Die Concept. The fly-to-die concept encompasses all Captive Air Training Missiles (CATMs) and Dummy Air Training Missiles (DATMs) regardless of missile type. They have an indefinite SIST and will be used for training until a failure is detected and verified. This concept does not exclude CATMs and DATMs from required preventive maintenance or inspections. Upon failure, CATMs and DATMs are returned to a naval airborne weapons maintenance unit or weapons support facility for repair and recertification.

1.3.6 Recertification and Repair. Upon completion of the deployment, AMRAAM, HARM, HARPOON, MAVERICK, SIDEARM, SIDEWINDER, SLAM, SLAM ER, SEA SPARROW, and SPARROW missiles which meet any of the following criteria must be returned to a maintenance activity for repair and recertification before reissue, for JSOW only subparagraphs b. and c. apply:

a. Missiles with expired MDDs.

b. Missiles which failed missile on-aircraft tests, built-in test, built-in self tests, or system operational tests.

c. Missiles that have been damaged.

d. HARM missiles AGM-88C (NALC PU06/WF22) captive carried 250 hours.

1.3.7 Explosives Handling Personnel Qualification and Certification (Qual/Cert) Program. Intermediate level maintenance personnel involved with the maintenance of air launched missiles must be trained, qualified, and certified to perform these maintenance actions in accordance with the requirements of OPNAVINST 8020.14/MCO P8020.11 (NOTAL) or MCO 8023.3 (NOTAL) and applicable type commander instructions.

1.3.8 Maintenance Training Requirements. Maintenance training is a continuous and ongoing process, conducted to ensure that personnel who operate, maintain, and support weapons systems and associated equipments are qualified to perform their respective functions. Formal and on-the-job maintenance training, for air launched missiles processed at Intermediate level maintenance activities, may be augmented through the use of Engineering Technical Specialists/Fleet Weapons Support Team provided by the Naval Air Warfare Center, Weapons Division, Point Mugu, CA. Volume I, chapter 4.4 provides procedures for requesting field service training and technical assistance. Volume I, section 6 provides additional information on all aspects of Naval Airborne Weapons Maintenance Training.

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CHAPTER 1.4

Depot Level Maintenance

1.4.1 General. This chapter describes the air launched missile maintenance actions authorized to be performed by naval weapons support facilities, naval aviation depots, and other industrial level maintenance establishments as prescribed in volume I chapter 2.3. Depot level maintenance supports weapons and end item systems in a state of operational readiness consistent with the mission requirements of the operating forces at the least total cost. Through the use of more extensive facilities, skills, and materials, depot level functions are carried out in industrial establishments or in the field by personnel from such establishments. As central points in the missile maintenance pipeline, naval airborne weapons maintenance units are assigned additional repair and recertification responsibilities. The maintenance actions include the provision of a forward area test, repair, and recertification capability for all-up-round air launched missiles or missile sections or components that have malfunctioned or have exceeded their Maintenance Due Dates (MDD).

1.4.2 Industrial Maintenance Processing

1.4.2.1 Figure 1-4-1 assigns the activity responsible for performing air launched missile maintenance. All maintenance actions are performed in accordance with the applicable approved Naval Air Systems Command (NAVAIRSYSCOM) technical manuals. In addition the associated Fixed Price Matrix (FPM) provide maintenance labor standards for the processing of air launched missiles and containers at weapons stations. The FPM facilitates workload planning, staffing, budgeting, and management control among maintenance activities by providing a uniform work breakdown structure, and encourages productivity initiatives and improvements. The FPM offers to the weapons support facilities a summary, both in manhours and dollars, of each weapon system delineated by distinct maintenance processes, and, as such, it is the basis from which the funding process progresses. The FPM will be published twice yearly - in May, with recommended labor standards, and in August, with negotiated fixed prices per unit per process.

1.4.2.2 Figures 1-4-2 through 1-4-25 depict the industrial maintenance processing flow for fleet return and new production all-up-round air launched missiles listed in paragraph 1.1.3 and their major sections and components. A brief description of the maintenance actions performed on each air launched missile is presented in the following paragraphs.

a. **SPARROW.** Maintenance consists of the inspection, testing, and limited repair of fleet return missiles and disassembly of failed missile sections and components for processing to designated overhaul points. Depot level repairs consist of major section remating and external component replacement. Repaired and tested all-up-round missiles are packaged in all-up-round missile containers or cradles. Missiles which are received at weapons support facilities or naval airborne weapons maintenance units with an expired MDD are tested and either reissued or rejected. Sections or components of rejected missiles are sent to designated overhaul points. Figure 1-4-2 shows the maintenance process for a fleet returned missiles. Figure 1-4-3 shows the assembly phase using sections from new production, returns from the designated overhaul point, or sections determined to be satisfactory during weapons support facilities or naval airborne weapons maintenance unit disassembly. Appendix D provides serviceable in-service times and service life designations.

b. **SIDEWINDER.** Maintenance consists of the inspection, testing, and interchanging of defective missile sections and the replacement of parts. The SIDEWINDER test is at the section level rather than an all-up-round. Required repairs, cleaning, painting, and preservation in support of interchanging operations are also authorized. Figure 1-4-4 shows the maintenance process for a fleet returned missile from receipt and inspection through the assembly phase. Figure 1-4-5 depicts the missile section processing flow from receipt and inspection, integration, testing, and final issue or disposition.

	WPNSTA Fallbrook	WPNSTA Yorktown	NAWMU-1 Guam (Note 1)
SPARROW	X ₂	X ₂	X
SIDEWINDER	X ₂	X ₃	X
PHOENIX		X _{4,5}	
HARM	X ₂	X ₂	X
MAVERICK	X	X	X
AMRAAM	X	X	X
PENGUIN	X	X	
HARPOON		X ₄	X
WALLEYE	X	X ₂	X
SIDEARM	X	X ₄	X
Notes: 1 Designated intermediate level maintenance reference volume I paragraph 1.3.1. 2 Assignment includes designated overhaul point responsibilities for wings and fins. 3 Assignment includes designated overhaul point responsibilities for wings fins, and warheads. 4 Assignment includes designated overhaul point responsibilities for warheads. 5 Assignment includes limited designated overhaul point responsibilities for guidance sections.			

Figure 1-4-1. Assignment of Air Launched Missile System Responsibilities to Weapon Stations and Naval Airborne Weapons Maintenance Units

c. **PHOENIX.** The PHOENIX missile is tested in all-up-round missile configuration on a guided missile test set at the weapons support facility. The guided missile test set fault isolates to the section level. The defective sections are replaced in the designated assembly and disassembly area using support equipment in accordance with procedures contained in the applicable authorized technical manuals. The weapons support facility functions as a processing point for fleet returns requiring depot level repairs. Serviceable sections and components, repaired by the designated overhaul point, are returned to the weapons support facility. Figure 1-4-6 depicts the PHOENIX maintenance process for fleet returned assets from receipt and inspection, visual inspection, integration, and testing. Figure 1-4-7 shows the assembly phase using returns from the designated overhaul point or sections determined to be satisfactory during disassembly.

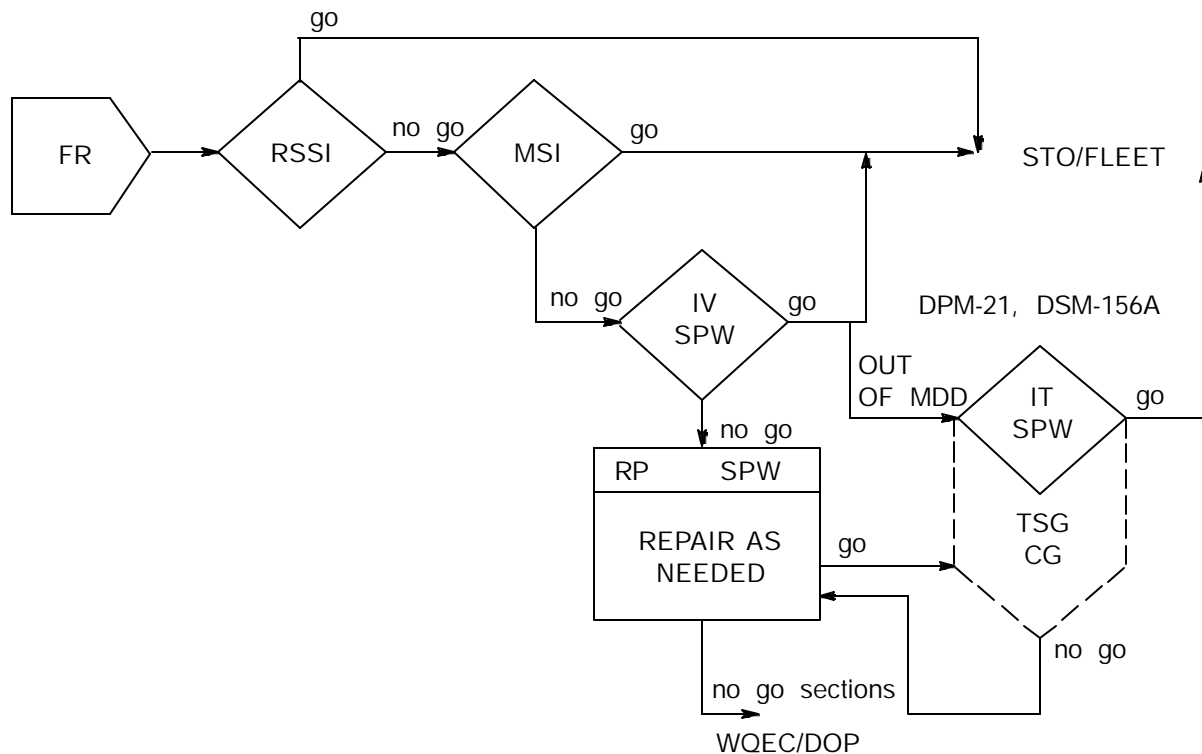
d. **HARM.** Maintenance includes the assembly of sections into all-up-round missiles, testing, fault isolation of fleet returned all-up-round missiles, and repair by replacement of faulty sections or components. Wing and fin repair and container repair are also included. Figure 1-4-8 shows the fleet return process through receipt, storage, segregation, and issue, visual inspection, required repair, section or component removal and installation, testing, and reissue. Figure 1-4-9 shows the new production and repair process from visual inspection, disassembly, testing, repackaging, and issue.

e. **MAVERICK.** Maintenance includes the visual inspection, cleaning, and touchup painting of external surfaces; repair of minor damage to wings and fins; filling of the hydraulic actuation system reservoir; removal and replacement of the dome cover support, actuator cover, dome cover actuator, hatch cover, fuselage door, and hydraulic actuation system; and all-up-round missile testing. Fault isolation by all-up-round testing is to the guidance control section or centeraft section. Faulty sections are removed and replaced, and the all-up-round is tested and recertified. Figure 1-4-10 shows the maintenance process for a fleet returned missile through receipt, storage, segregation, and issue, visual inspection, integration, and testing. Figure 1-4-11 shows the new production and repair process, including visual inspection, integration, testing, and reissue.

f. **AMRAAM.** Depot level maintenance consists of the inspection, testing, reprogramming, and repair of fleet returned missiles. Repaired and tested all-up-round missiles are packaged in all-up-round missile containers for shipment to user activities. Sections or components of rejected missiles are repaired at the depot. This AUR approach eliminates the need for the Navy to maintain complex test systems and stocks of spare missile sections at organic repair facilities. The Navy does not procure or stock spare missile sections. All depot level AUR and section level maintenance is performed at the contractor depot.

g. **PENGUIN.** AUR Missile Maintenance consists of inspection, fault isolation, replacing failed sections, specified components, retesting, cleaning, touch up painting, corrosion control, and replacement of illegible markings. Failed sections/components are returned to the depot for repair. Figure 1-4-12 shows the maintenance process for fleet returned assets and new production and repair components. The automatic test system used for missile test is used to verify and fault isolate fleet returned Missile Control Systems which are part of the missile launch assembly used on the SH-60 series Helicopter.

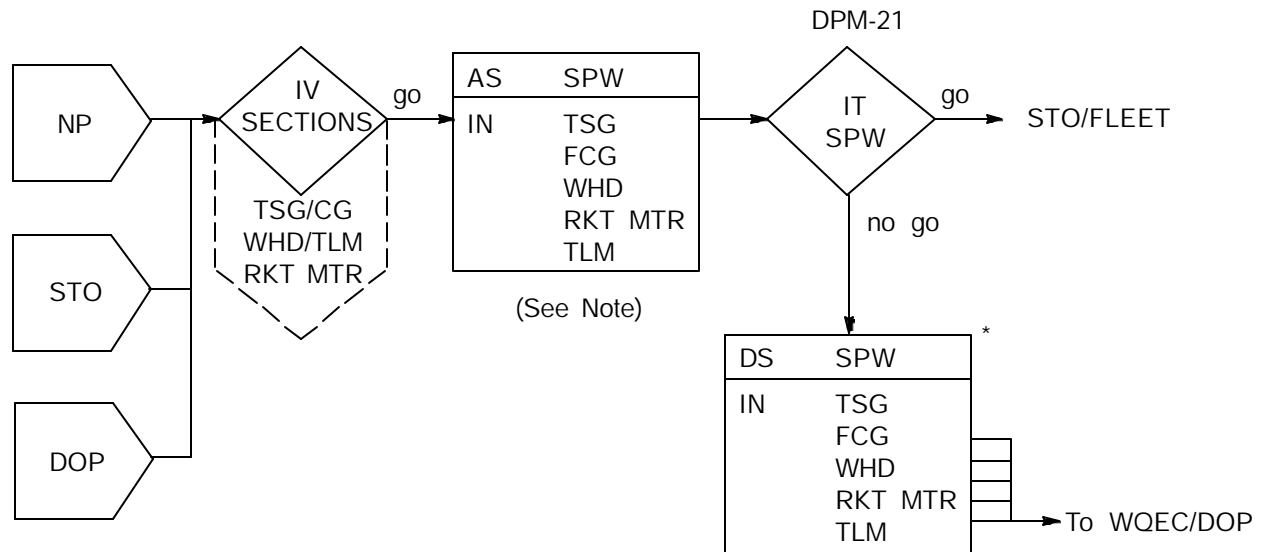
h. **HARPOON.** Maintenance consists of scheduled maintenance for all missiles returned for MDD expiration. Except as impacted by the warranty provisions, unscheduled maintenance is performed on all missiles which have been physically damaged or which fail built-in test or missile system test set tests. Figure 1-4-13 shows the basic maintenance process for all HARPOON configurations, including both fleet returned and new production missiles. This figure applies only to weapons support facilities and not naval airborne weapons maintenance units or naval magazines. Figure 1-4-15 shows the inspection and repair flow for HARPOON booster section, including TARTAR, and capsule/canister. Figure 1-4-14 depicts the processing flow for installation of HARPOON/SLAM/ SLAM-ER air launch kits from receipt and inspection, testing, assembly, and testing. Figure 1-4-17 shows the HARPOON TARTAR missile flow for fleet return and new production missiles from receipt, inspection, testing, assembly, and issue. Figure 1-4-16 shows the HARPOON CAP/CAN missile flow for fleet return and new production missiles from receipt and inspection, testing, assembly, and issue.



SPARROW LEGEND

CG	Control Group	MSI	Missile Sentencing Inspection
DOP	Designated Overhaul Point	RP	Repair of Section or Component in Place
FR	Fleet Return	RSSI	Receipt, Segregation, Storage, and Issue
IT	Incoming Test of Missile/Section/Component	SPW	SPARROW (Air Launched Tactical Missile)
IV	Incoming Visual Inspection of Missile/Section/Component	STO	Storage
MDD	Maintenance Due Date	TSG	Target Seeker Group (Guidance Section)
		WQEC	Weapons Quality Engineering Center

Figure 1-4-2. SPARROW Fleet Return



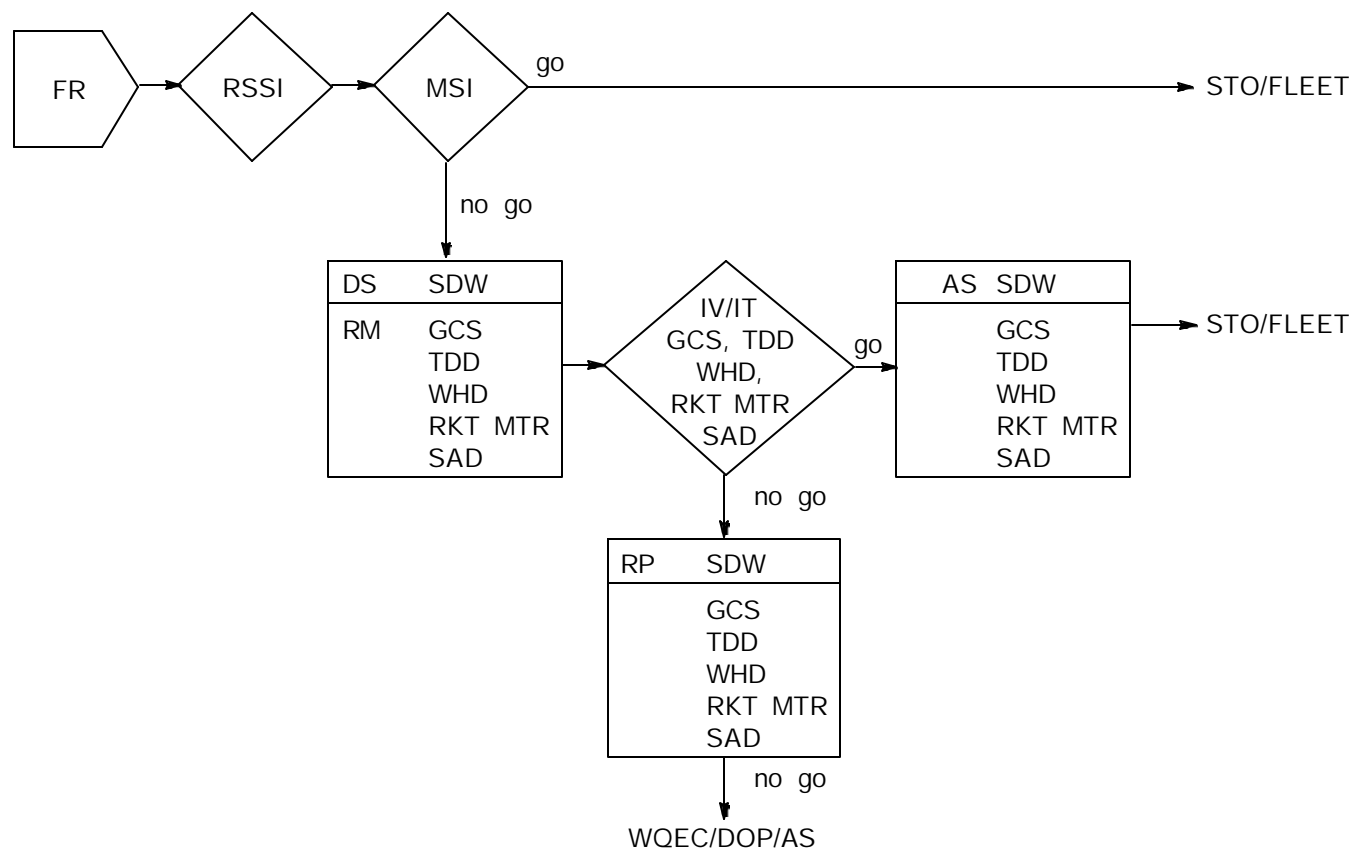
*DS always occurs if leading section is "no go."

NOTE: As not generally reported due to AUR test.

SPARROW LEGEND

AS	Assembly	NP	New Production
CG	Control Group	RKT MTR	Rocket Motor
DOP	Designated Overhaul Point	RM	Removal of Section or Component
DS	Disassembly (Shore Activity-of-AUR)	SPW	SPARROW (Air Launched Tactical Missile)
FCG	Flight Control Group	STO	Storage
IN	Installation of Section or Component	TLM	Telemetry System
IT	Incoming Test of Missile/Section/ Component	TSG	Target Seeker Group (Guidance Section)
IV	Incoming Visual Inspection of Missile/ Section/Component	WHD	Warhead or Warhead Section
		WQEC	Weapons Quality Engineering Center

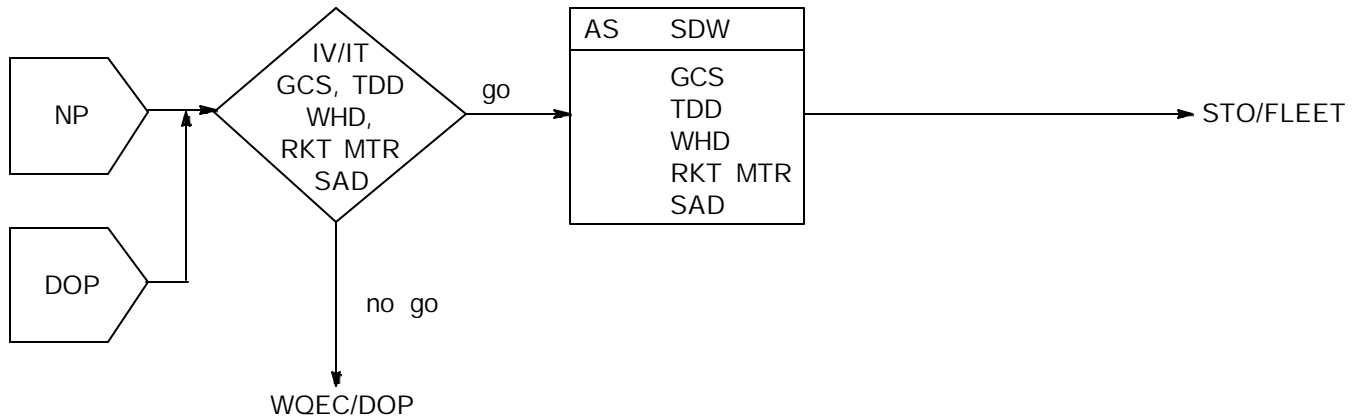
Figure 1-4-3. SPARROW New Production/Repair/Build-up from Sections



SIDEWINDER LEGEND

AS	Assembly	RKT MTR	Rocket Motor
DOP	Designated Overhaul Point	RM	Removal of Section or Component
DS	Disassembly	RP	Repair Section
FR	Fleet Return	RSSI	Receipt, Segregation, Storage, and Issue
GCS	Guidance Control Section	SAD	Safety and Arming Device
IT	Incoming Test of Missile/Section/ Component	SDW	SIDEWINDER (Tactical Weapon)
IV	Incoming Visual Inspection of Missile/ Section/Component	STO	Storage
MSI	Missile Sentencing Inspection	TDD	Target Detecting Device
		WHD	Warhead or Warhead Section
		WQEC	Weapons Quality Engineering Center

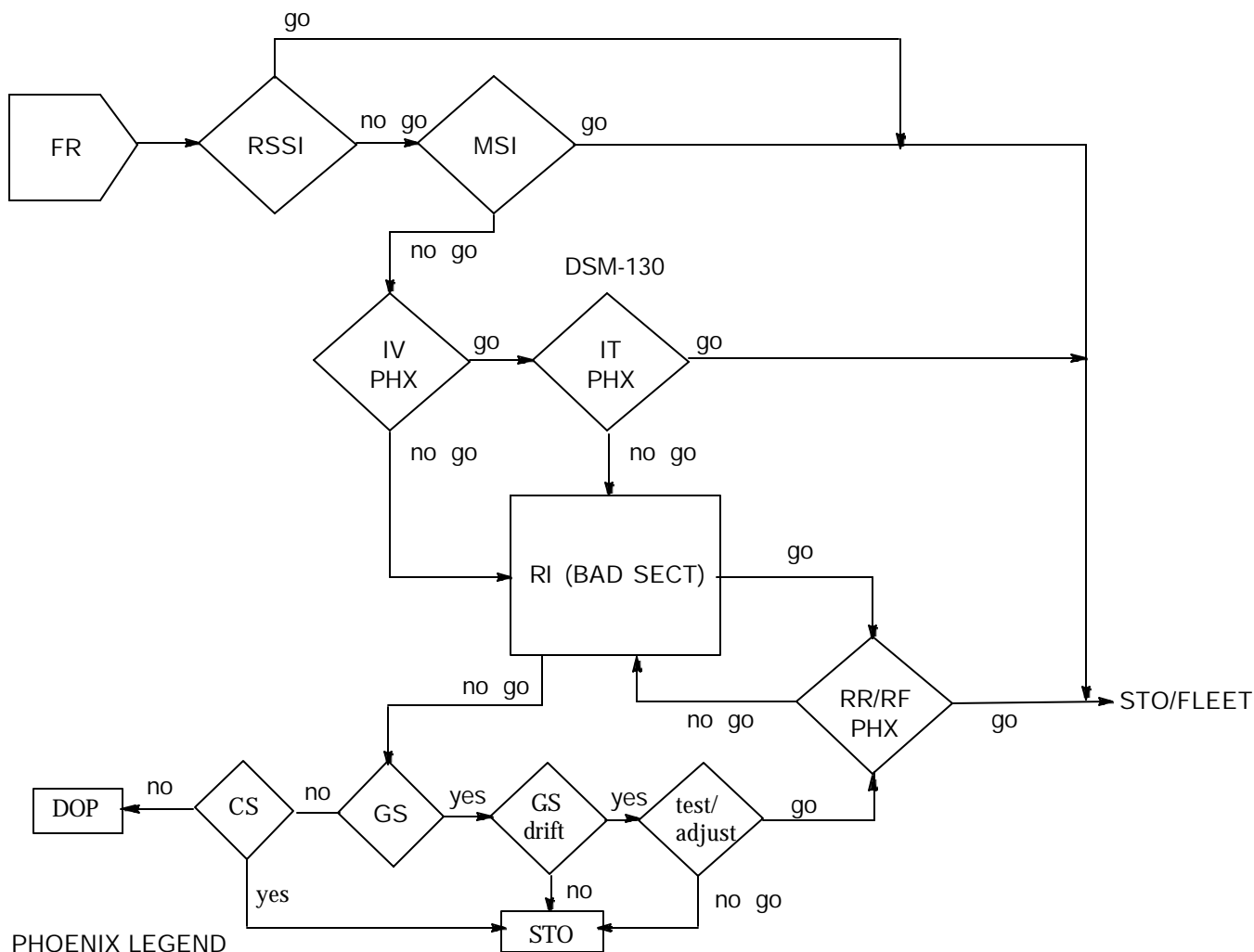
Figure 1-4-4. SIDEWINDER Fleet Return



SIDEWINDER LEGEND

AS	Assembly	RKT MTR	Rocket
DOP	Designated Overhaul Point	SAD	Safety and Arming Device
GCS	Guidance Control Section	SDW	SIDEWINDER (Tactical Weapon)
IT	Incoming Test of Missile/Section/ Component	STO	Storage
IV	Incoming Visual Inspection of Missile/ Section/Component	TDD	Target Detecting Device
NP	New Production	WHD	Warhead or Warhead Section
		WQEC	Weapons Quality Engineering Center

Figure 1-4-5. SIDEWINDER New Production/Repair from Sections



PHOENIX LEGEND

DOP Designated Overhaul Point

FR Fleet Return

IT Incoming Test of Missile/Section/
Component

IV Incoming Visual Inspection of Missile/
Section/Component

MSI Missile Sentencing Inspection

PHX PHOENIX (Tactical Missile)

RF Retest After Test Failure

RI Removal and Installation of Section or
Component

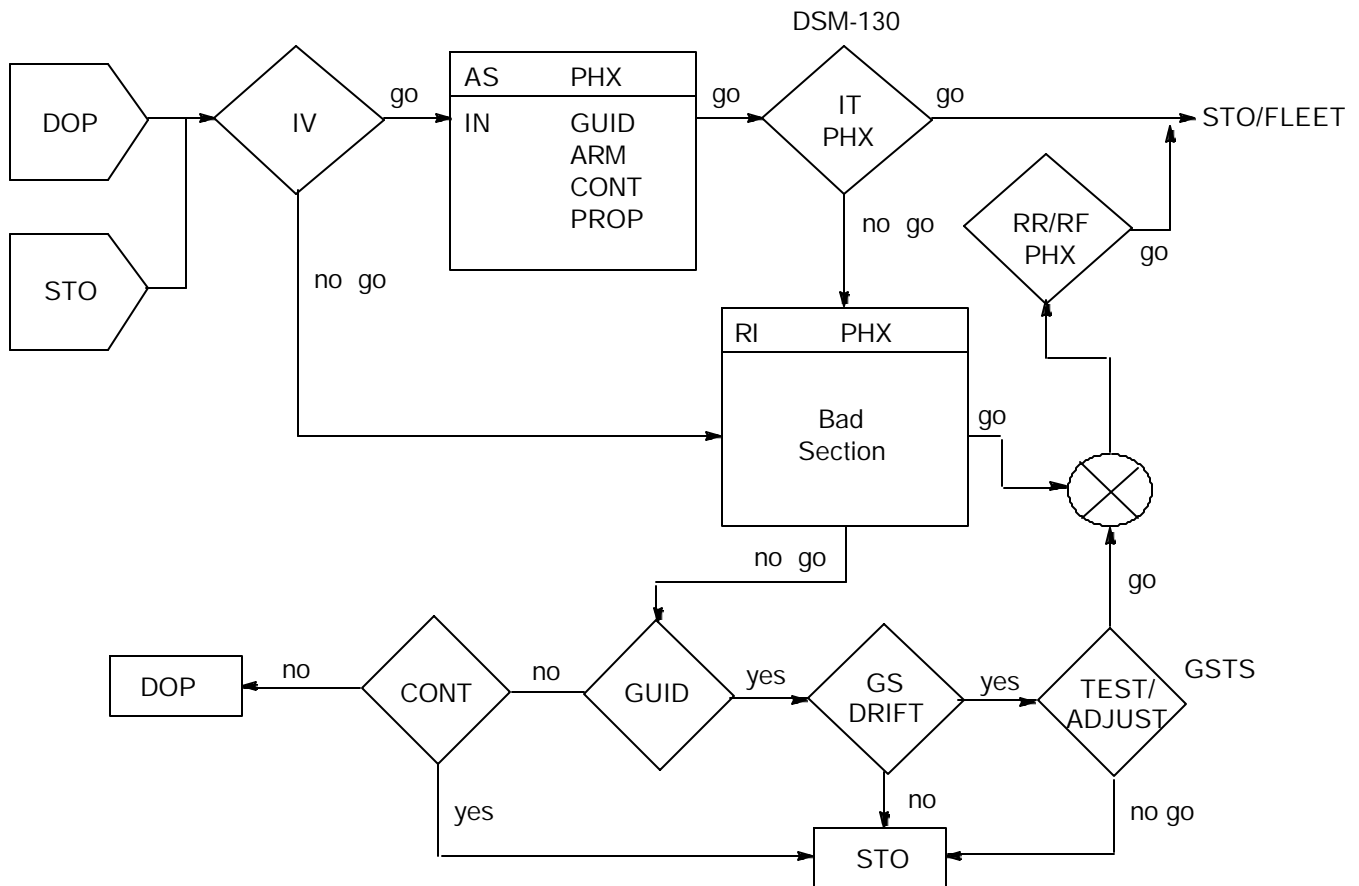
RR Retest After Remate of Sections

RSSI Receipt, Segregation, Storage, and Issue
Storage

GS Guidance Section or GUID

CS Control Section or CONT

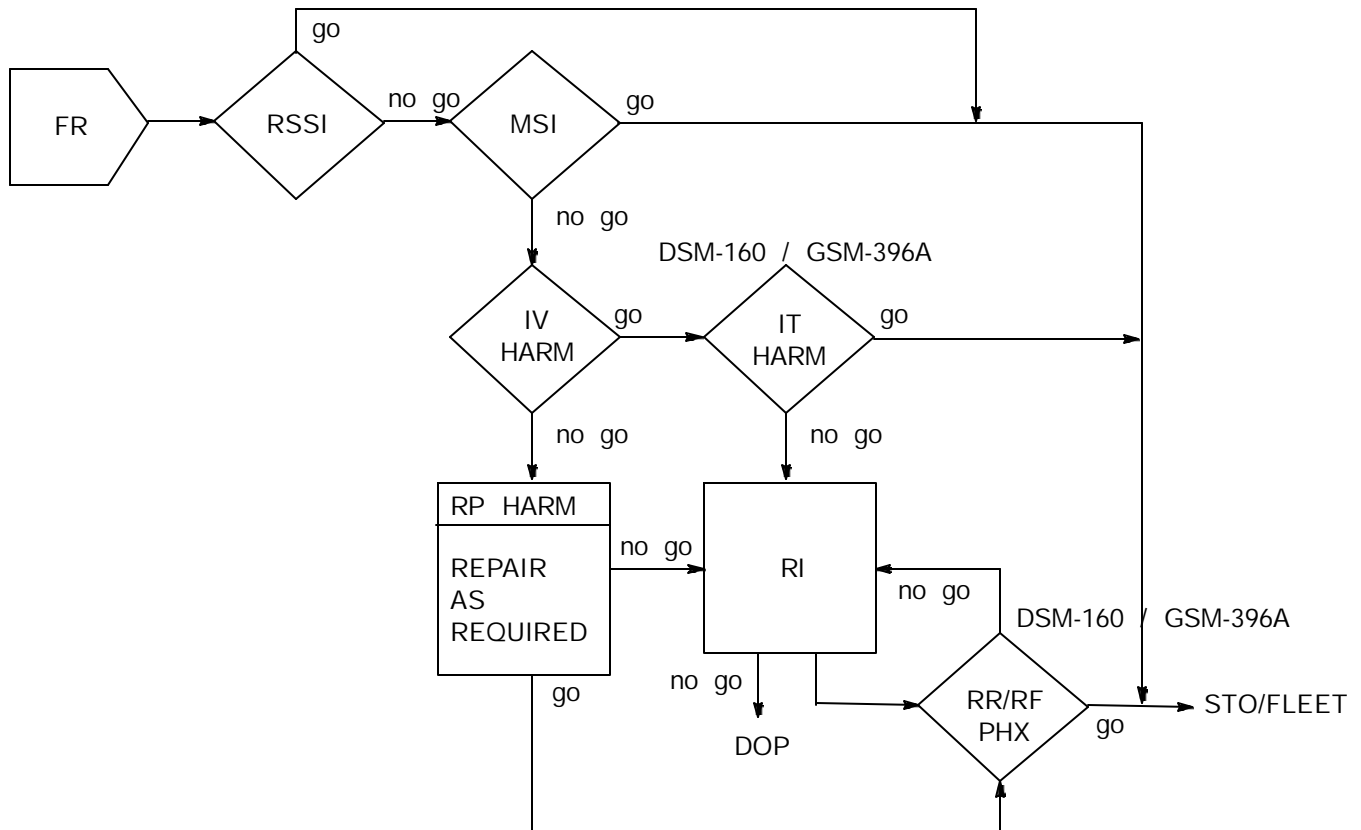
Figure 1-4-6. PHOENIX Fleet Return



PHOENIX LEGEND

ARM	Armament Section	NP	New Production - none
AS	Assembly	PHX	PHOENIX (Tactical Missile)
CONT	Control Section	PROP	Propulsion
DOP	Designated Overhaul Point	RF	Retest After
GUID	Guidance Section	RI	Removal and Installation of Section or Component
IN	Installation of Section or Component	RR	Retest After Remate of Sections
IT	Incoming Test of Missile/Section/Component	STO	Storage
IV	Incoming Visual Inspection of Missile/Section/Component	WQEC	Weapons Quality Engineering Center
DSM-130	Guided Missile Test Set (GMTS)	GSTS	Guidance Section Test Station

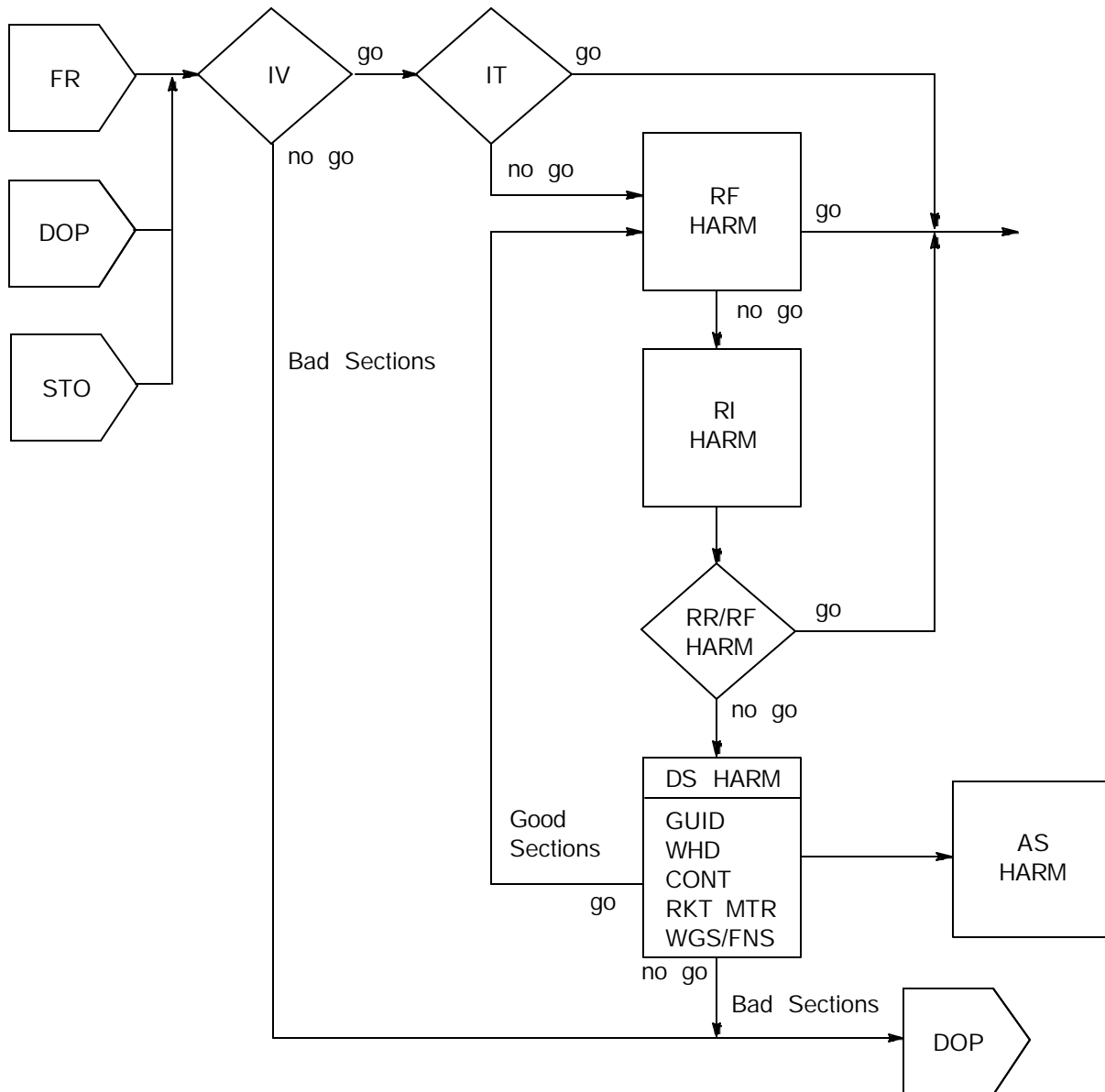
Figure 1-4-7. PHOENIX New Production/Repair/Storage Sections



HARM LEGEND

DOP	Designated Overhaul Point	RF	Retest After Test Failure
FR	Fleet Return	RI	Removal and Installation of Section or Component
HARM	HARM (Tactical Missile)	RP	Repair of Section or Component in Place
IT	Incoming Test of Missile/Section/Component	RR	Retest After Remate of Sections
IV	Incoming Visual Inspection of Missile/Section/Component	RSSI	Receipt, Segregation, Storage, and Issue Storage
MSI	Missile Sentencing Inspection	STO	

Figure 1-4-8. HARM Fleet Return

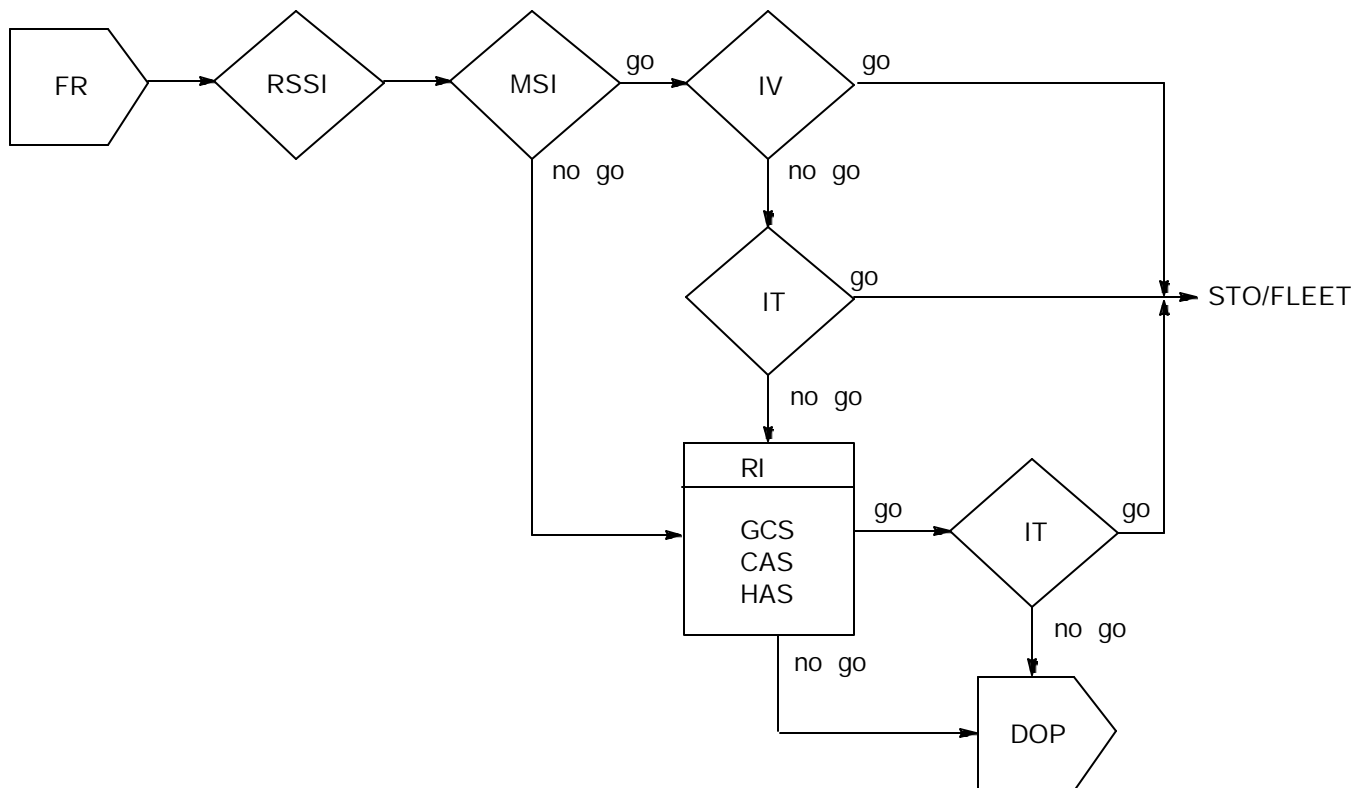


HARM LEGEND

AS Assembly
 CONT Control
 DOP Designated Overhaul Point
 DS Disassembly (Shore Activity-of-AUR)
 FR Fleet Return
 GUID Guidance Section
 HARM HARM (Tactical Missile)
 IT Incoming Test of Missile/Section/
 Component

IV Incoming Visual Inspection of Missile/
 Section/Component
 RF Retest After Test Failure
 RI Removal and Installation of Section or
 Component
 RKT MTR Rocket Motor
 RR Retest After Remate of Sections
 STO Storage
 WGS/FNS Wings and Fins
 WHD Warhead or Warhead Section

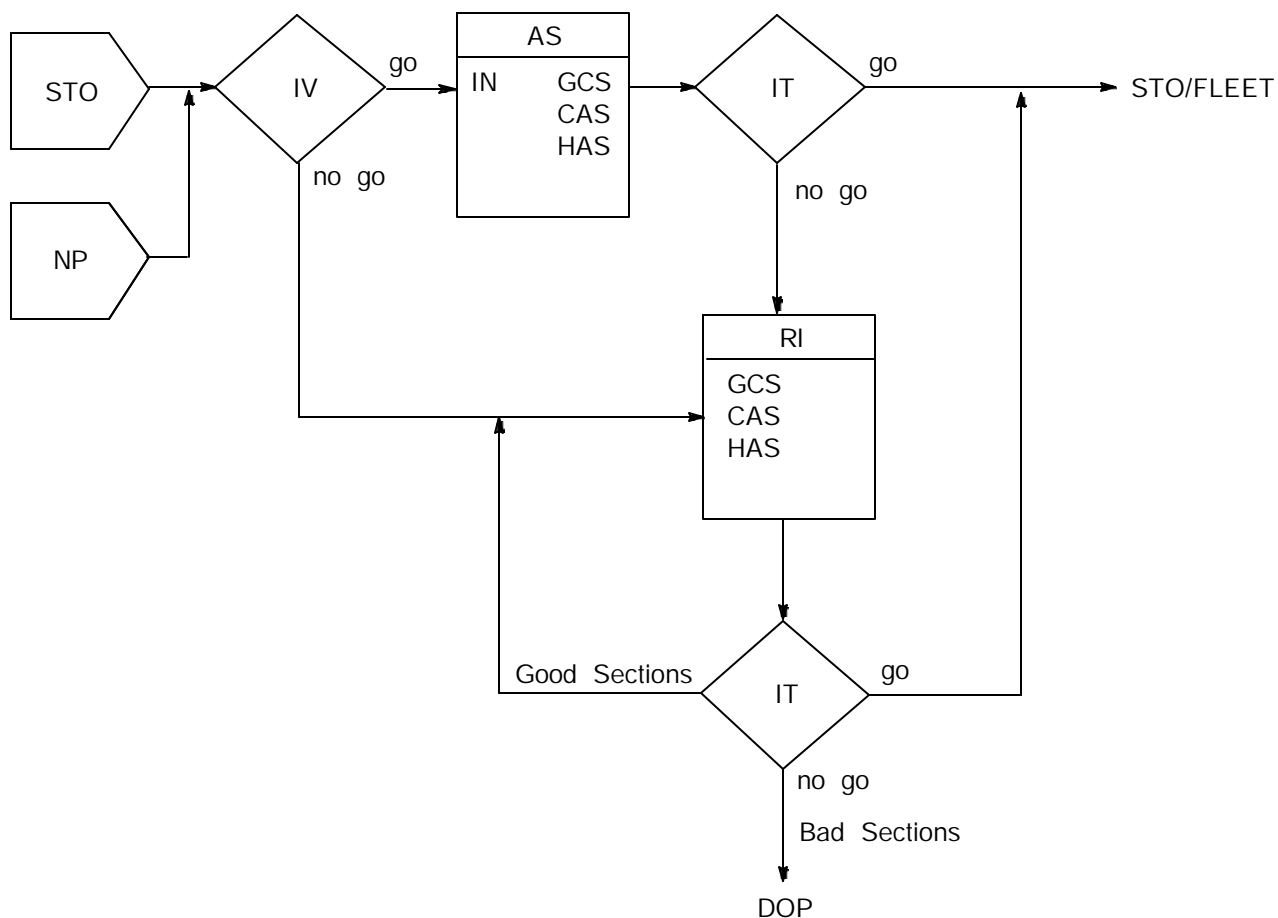
Figure 1-4-9. HARM New Production/Repair



MAVERICK LEGEND

CAS	Center Aft Section	IV	Incoming Visual Inspection of Missile/ /Section/Component
DOP	Designated Overhaul Point	MSI	Missile Sentencing Inspection
FR	Fleet Return	RI	Removal and Installation of Section or Component
GCS	Guidance Control Section	RSSI	Receipt, Segregation, Storage, and Issue
HAS	Hydraulic Actuation Section	STO	Storage
IT	Incoming Test of Missile/Section/ Component		

Figure 1-4-10. MAVERICK Fleet Return

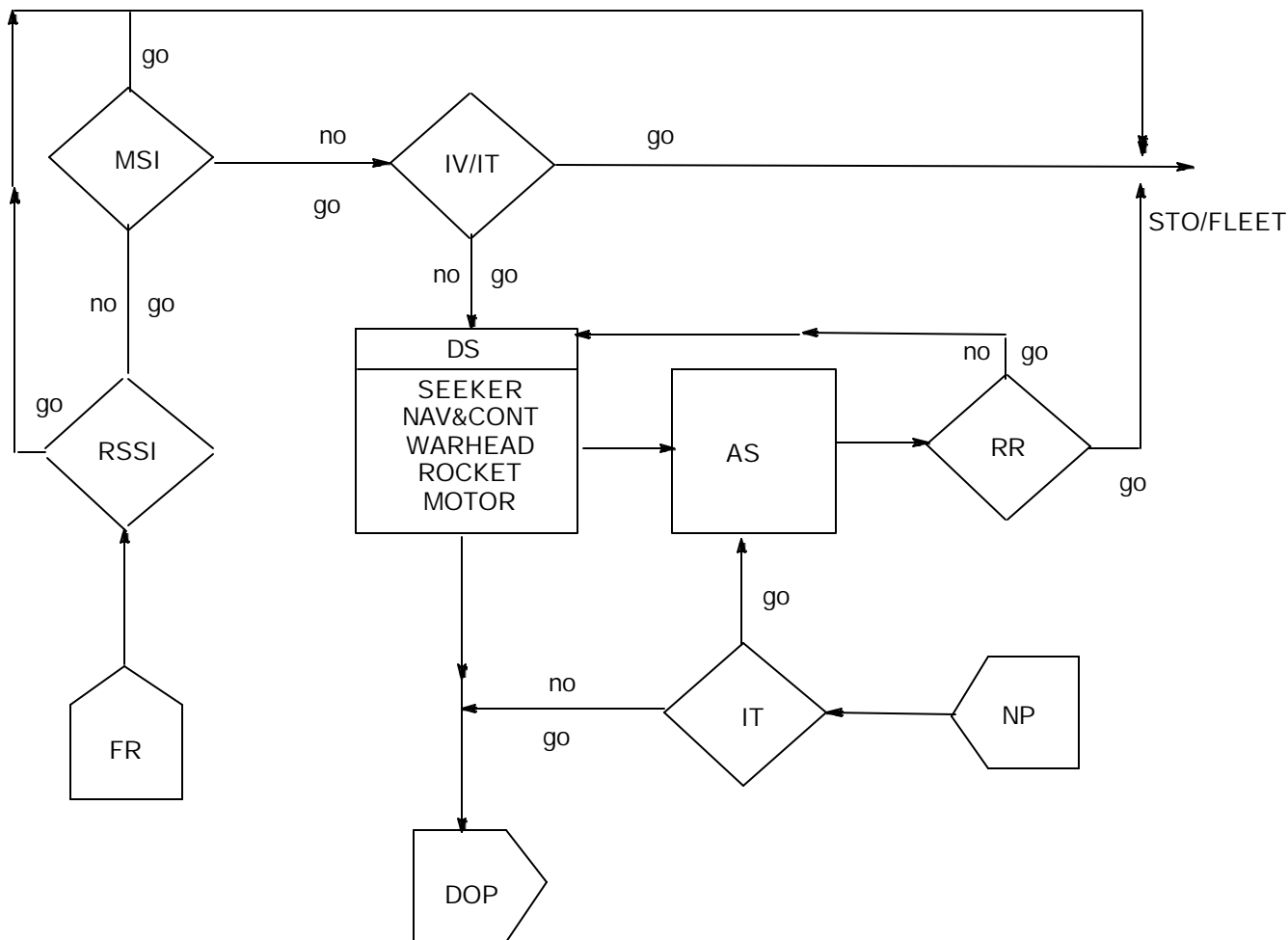


MAVERICK LEGEND

AS Assembly
 CAS Center Aft Section
 DOP Designated Overhaul Point
 GCS Guidance Control Section
 HAS Hydraulic Actuation Section
 IN Installation of Section or Component

IT Incoming Test of Missile/Section/Component
 IV Incoming Visual Inspection of Missile/Section/Component
 NP New Production
 RI Removal and Installation of Section or Component
 STO Storage

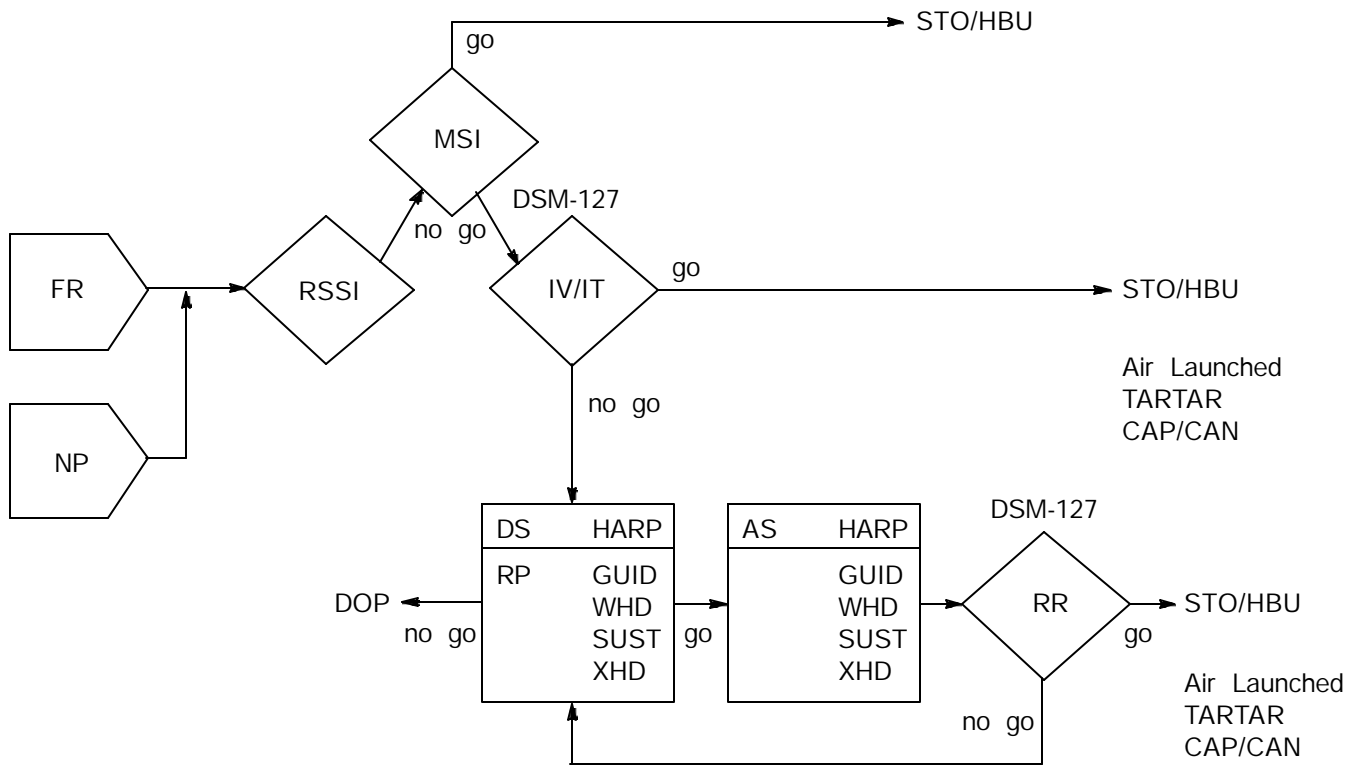
Figure 1-4-11. MAVERICK New Production/Repair



PENGUIN LEGEND

AS	Assembly	MSI	Missile Sentencing Inspection
DOP	Designated Overhaul Point	NP	New Production
DS	Disassembly	RI	Removal and Installation of Section
FR	Fleet Return	RR	Retest After Remate of Sections
IT	Incoming Test of Missile/Section/	RSSI	Receipt, Storage, Segregation and Issue
IV	Incoming Visual Inspection of Missile/Section	STO	Storage

Figure 1-4-12. PENGUIN Fleet Return/New Production/Repair

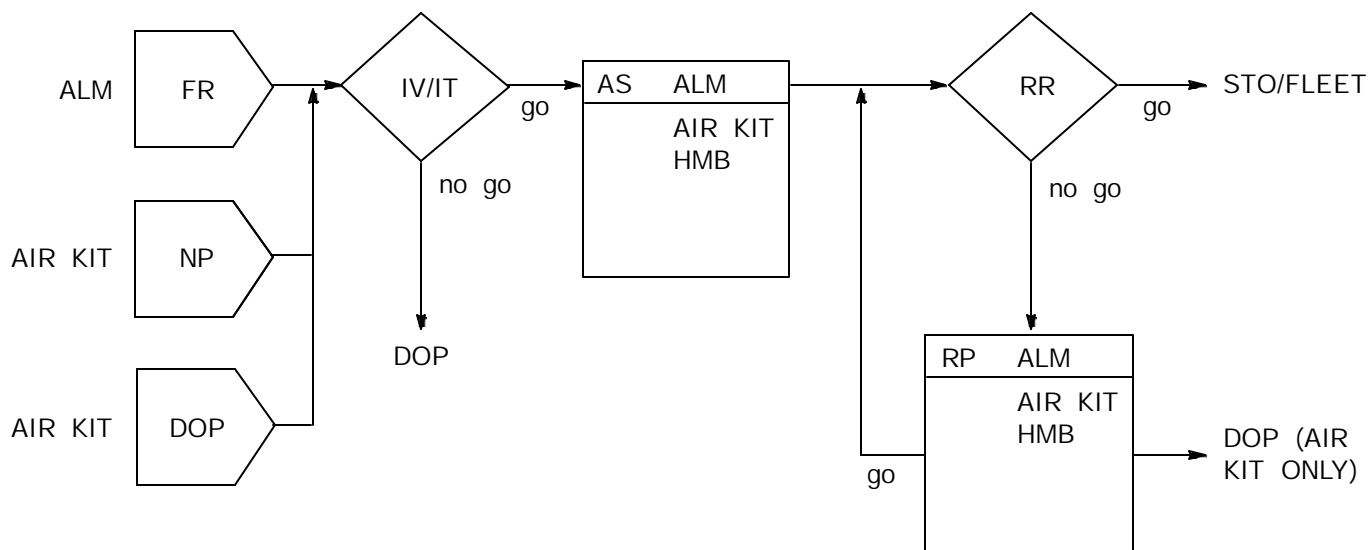


HARPOON LEGEND

AS	Assembly
NP	New Production
CAP/CAN	CAP/CAN Tactical Missile
DOP	Designated Overhaul Point
DS	Disassembly
FR	Fleet Return
GUID	Guidance Section
HARP	HARPOON
HBU	Hold for Build-up
IT	Incoming Test of Missile/Section/Component
IV	Incoming Visual Inspection of Missile/Section/Component

MSI	Missile Sentencing Inspection
RP	Repair
RR	Retest After Remate of Sections
RSSI	Receipt, Segregation, Storage, and Issue
STO	Storage
SUST	Sustainer Section
TARTAR	TARTAR Tactical Missile
WHD	Warhead or Warhead Section
XHD	Exercise Head Section

Figure 1-4-13. HARPOON Basic Missile Flow

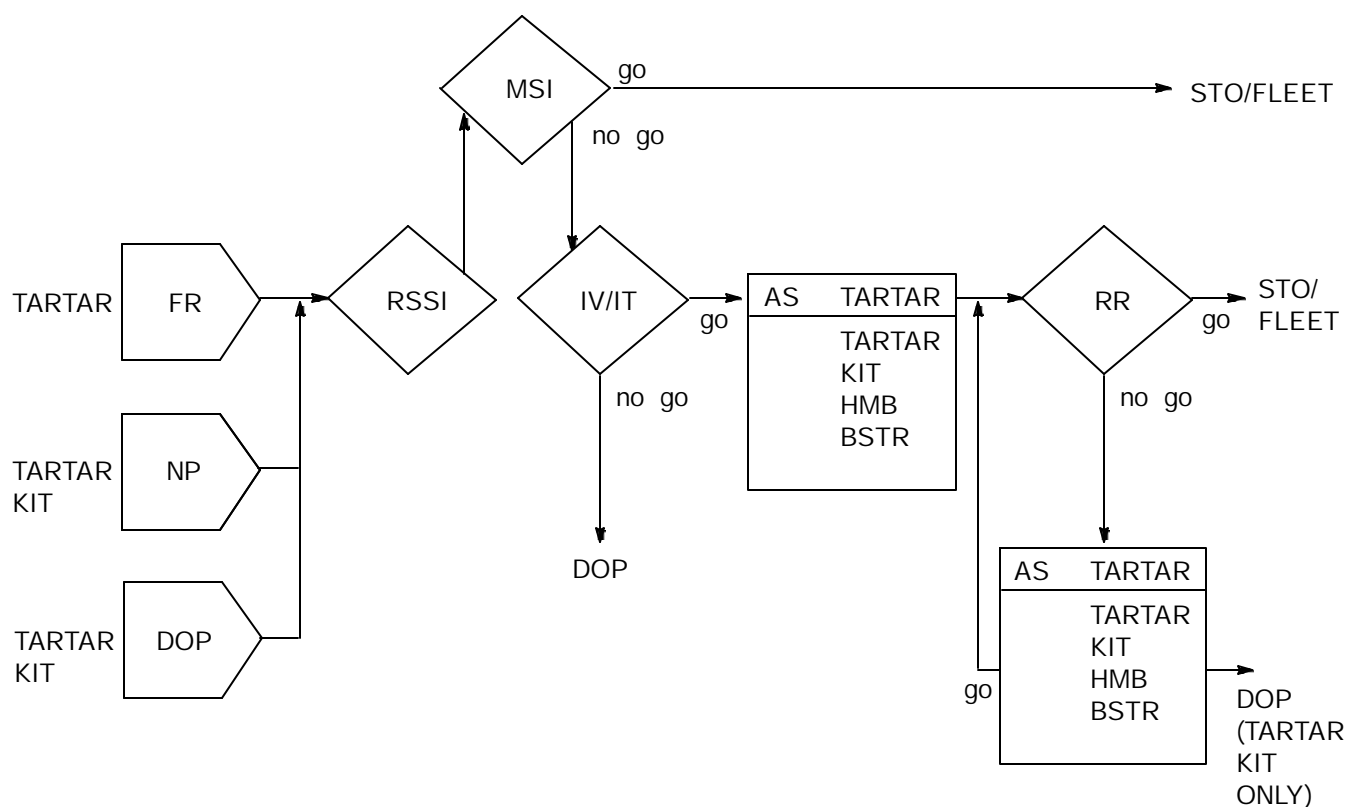


HARPOON LEGEND

AIR KIT	Air Launch Kit
CONT	Air Launch Tactical Missile
DOP	Assembly
DS	Designated Overhaul Point
FR	Fleet Return
HMB	HARPOON Missile Body
IT	Incoming Test Missile/Section/ Component

IV	Incoming Visual Inspection of Missile/Section/Component
NP	New Production
RP	Repair
RR	Retest After Remate of Sections
STO	Storage

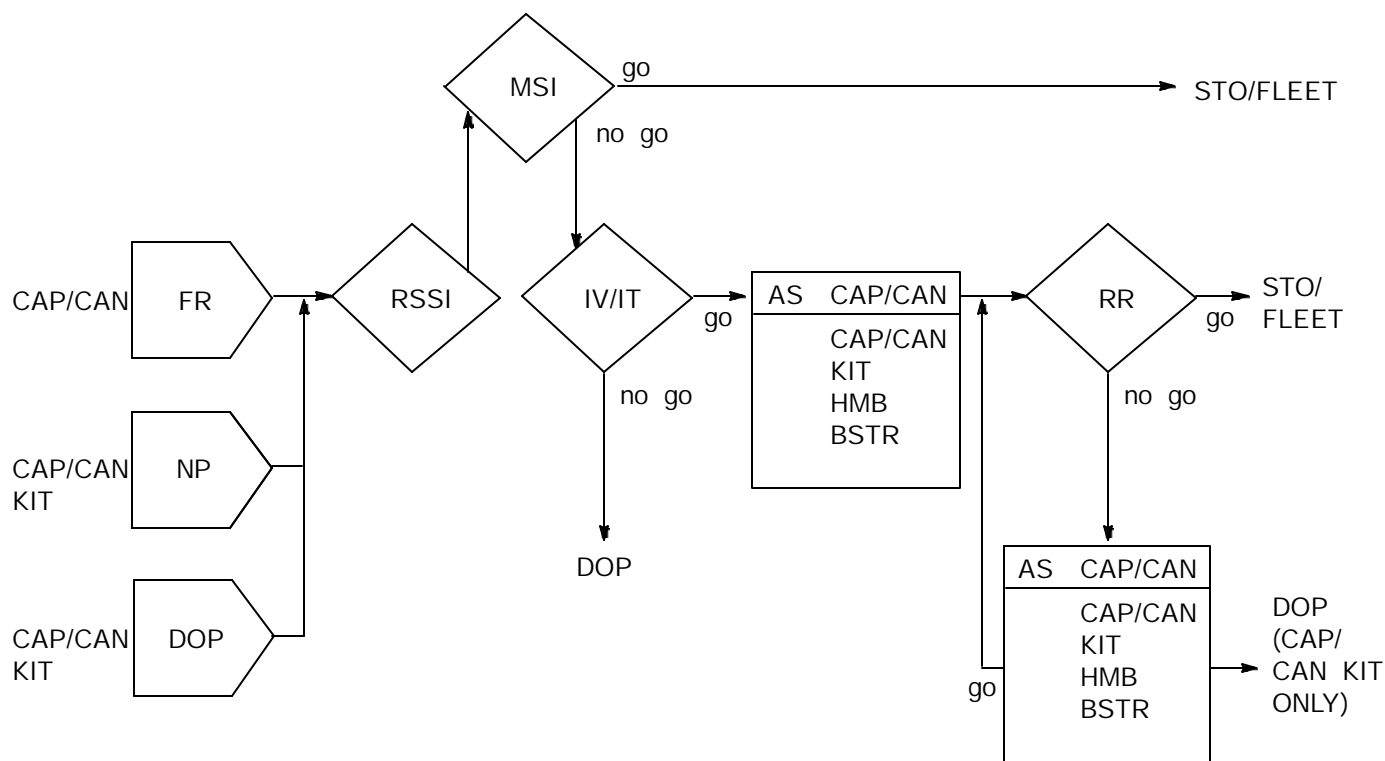
Figure 1-4-14. HARPOON Air Launched Missile Flow



HARPOON LEGEND

AS	Assembly	NP	New Production
BSTR	Booster Section	RP	Repair
DOP	Designated Overhaul Point	RR	Retest After Remate of Sections
FR	Fleet Return	RSSI	Receipt, Segregation, Storage, and Issue
HMB	HARPOON Missile Body/Section/Component	STO	Storage
IT	Incoming Test Missile/Section/Component	TARTAR	Tactical Missile
IV	Incoming Visual Inspection of Missile/Section/Component	TARTAR KIT	TARTAR Launch Kit
MSI	Missile Sentencing Inspection		

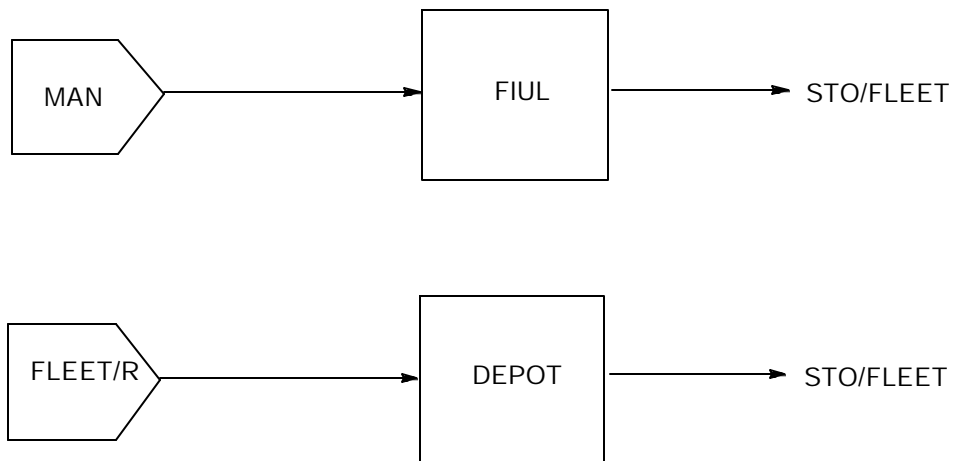
Figure 1-4-15. HARPOON TARTAR Missile Flow



HARPOON LEGEND

AS	Assembly	IV	Incoming Visual Inspection of Missile/ Section/Component
BSTR	Booster Section	MSI	Missile Sentencing Inspection
CAP/CAN	CAP/CAN Tactical Missile	NP	New Production
CAP/CAN KIT	CAP/CAN Launch Kit	RP	Repair
DOP	Designated Overhaul Point	RR	Retest after Remate of Sections
FR	Fleet Return	RSSI	Receipt, Segregation, Storage and Issue
HMB	HARPOON Missile Body	STO	Storage
IT	Incoming Test of Missile/ Section/Component		

Figure 1-4-16. HARPOON CAP/CAN Missile Flow

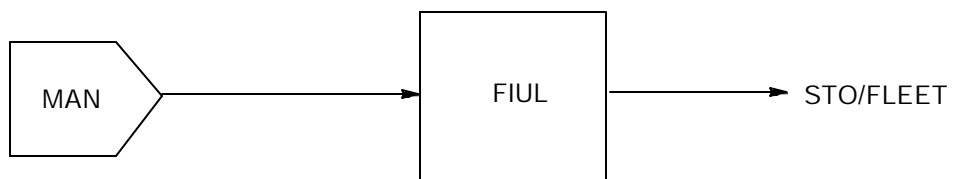


SLAM/SLAM ER LEGEND

FIUL Fleet Issued Unit Load
 MAN Manufacturer

STO Storage
 FLEET/R Feet Return (failed bit)

Figure 1-4-17. SLAM/SLAM ER New Production/Repair

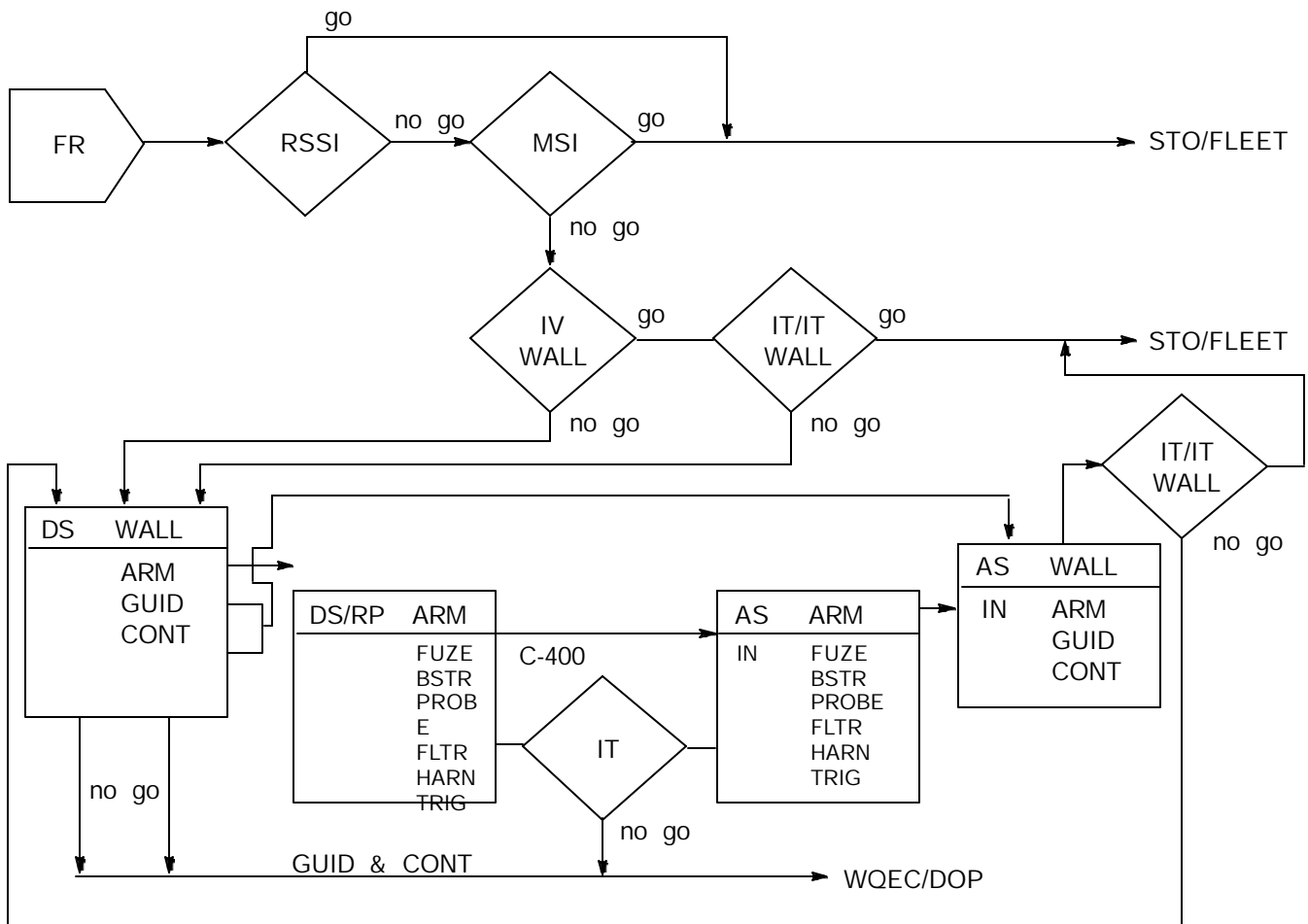


TOW LEGEND

FIUL Fleet Issued Unit Load
MAN Manufacturer

STO Storage

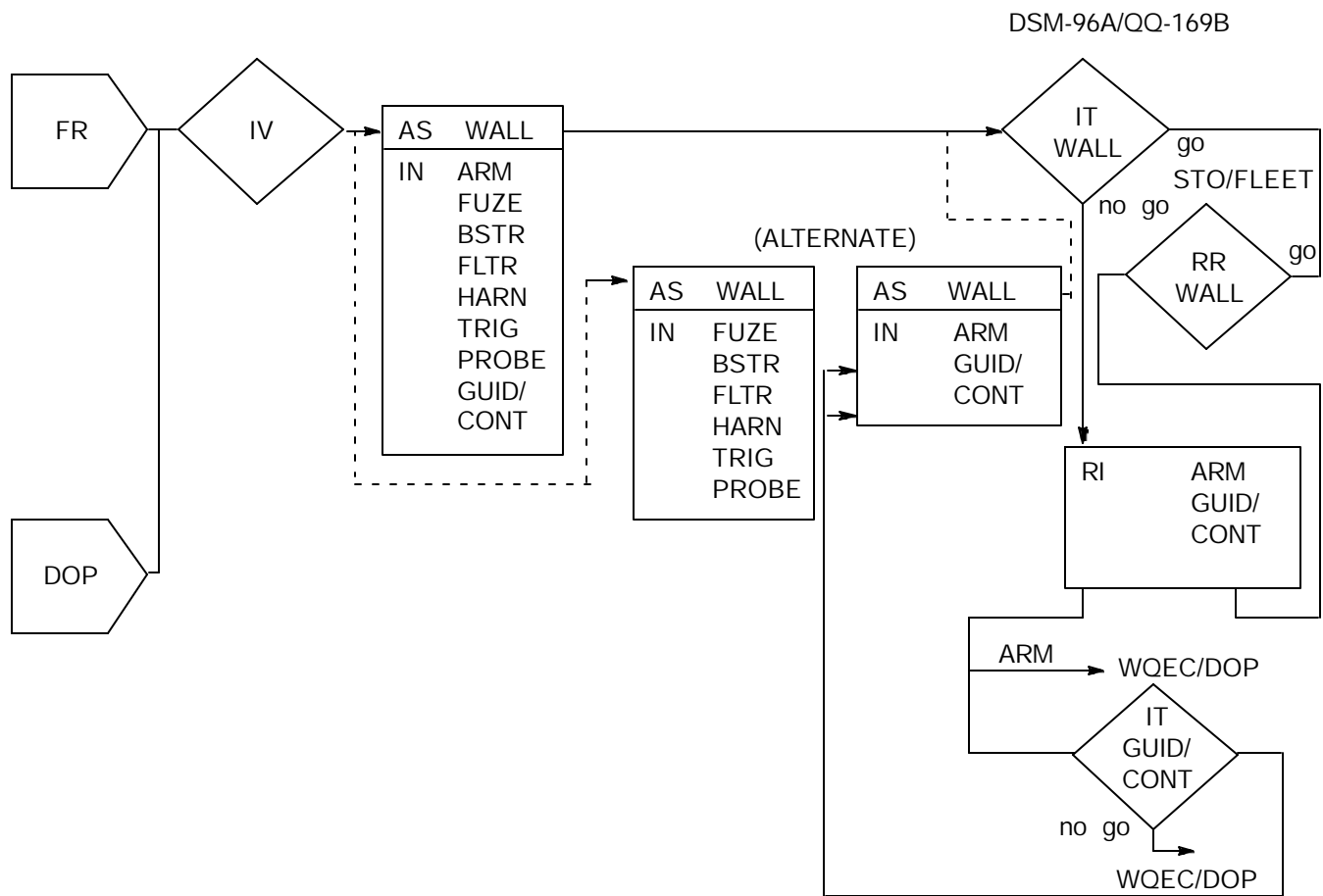
Figure 1-4-18. TOW New Production/Repair



WALLEYE LEGEND

ARM	Armament Section	IV	Incoming Visual Inspection of Missile/Section/Component
AS	Assembly	MSI	Missile Sentencing Inspection
BSTR	Booster, Fuze	PROBE	Pressure Probe
CONT	Control Section	RM	Removal
DOP	Designated Overhaul Point	RP	Repair of Section of Component in Place
DS	Disassembly	RR	Retest After Remate of Sections
FLTR	Filter	RSSI	Receipt, Segregation, Storage and Issue
FR	Fleet Return	STO	Storage
FUZE	Fuze	TRIG	Triggering Device
GUID	Guidance Section	WALL	WALLEYE (Tactical Weapon)
HARN	Wiring Harness (SP-TSG/FCG)	WQEC	Weapons Quality Engineering Center
IN	Installation of Section or Component		
IT	Incoming Test of Missile/Section/Component		

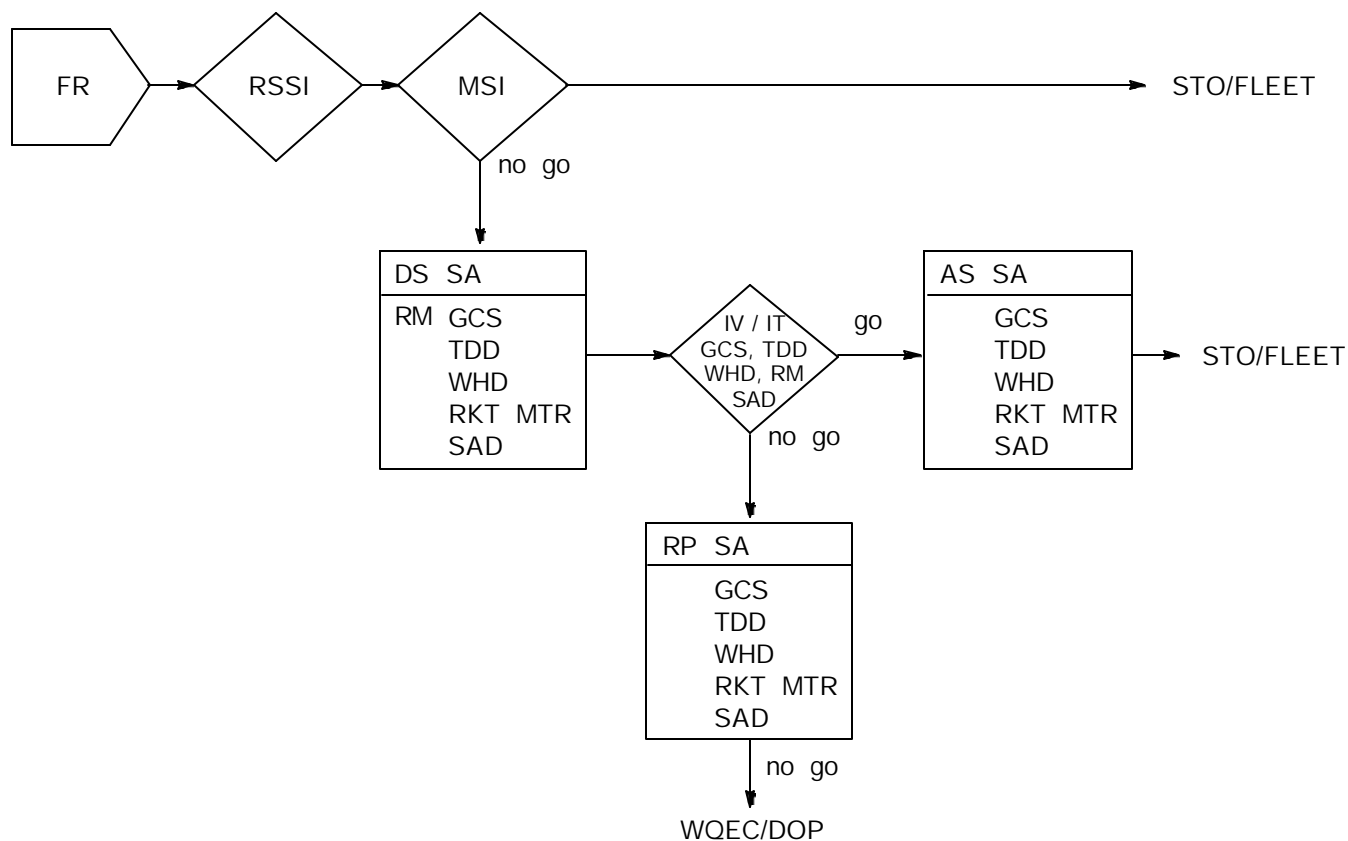
Figure 1-4-19. WALLEYE Fleet Return



WALLEYE LEGEND

ARM	Armament Section	IV	Incoming Visual Inspection of Missile/Section/Component
AS	Assembly	PROBE	Pressure Probe
BSTR	Booster, Fuze	RI	Removal and Installation of Section or Component
CONT	Control Section	RR	Retest After Remate of Sections
DOP	Designated Overhaul Point	STO	Storage
FLTR	Filter	TRIG	Triggering Device
FR	Fleet Return	WALL	WALLEYE (Tactical Weapon)
FUZE	Fuze	WQEC	Weapons Quality Engineering Center
GUID	Guidance Section		
HARN	Wiring Harness (SP-TSG/FCG)		
IN	Installation of Section or Component		
IT	Incoming Test of Missile/Section/Component		

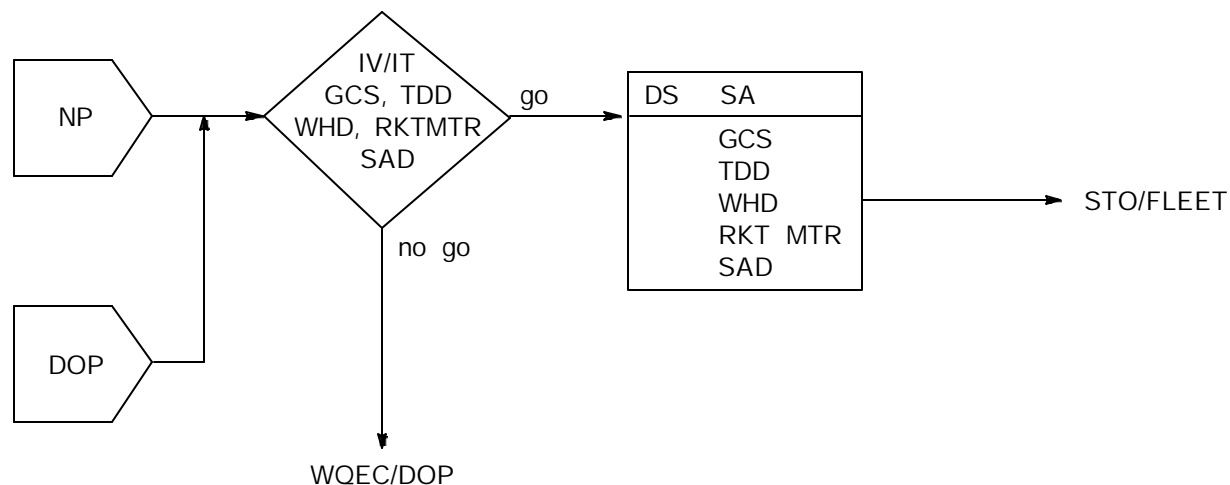
Figure 1-4-20. WALLEYE New Production/Repair



SIDEARM LEGEND

AS	Assembly	RKT MTR	Rocket Motor
DOP	Designated Overhaul Point	RM	Removal of Section or Component
DS	Disassembly	RP	Repair of Section or Component in Place
FR	Fleet Return	RSSI	Receipt, Segregation, Storage and Issue
GCS	Guidance Control Section	SA	SIDEARM (Tactical Weapon)
IN	Installation	SAD	Safety and Arming Device
IT	Incoming Test Missile/Section/Component	STO	Storage
IV	Incoming Visual Inspection of Missile/Section/Component	TDD	Target Detecting Device
MSI	Missile Testing Inspection	WHD	Warhead and Warhead Section
		WQEC	Weapons Quality Engineering Center

Figure 1-4-21. SIDEARM Fleet Return

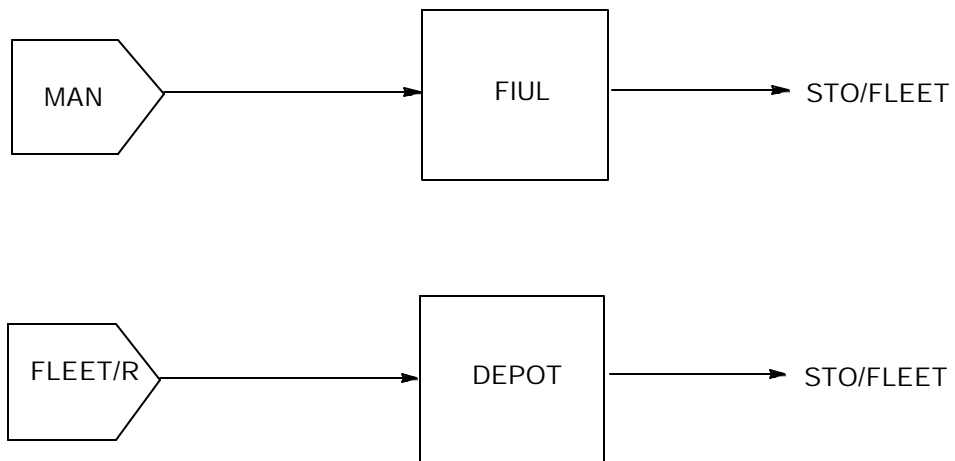


SIDEARM LEGEND

AS Assembly
 DOP Designated Overhaul Point
 DS Disassembly
 FR Fleet Return
 GCS Guidance Control Section
 IN Installation
 IT Incoming Test Missile/Section/
 Component
 IV Incoming Visual Inspection of Missile/
 Section/Component

NP New Production
 RM Rocket Motor
 SA SIDEARM (Tactical Weapon)
 SAD Safety and Arming Device
 STO Storage
 TDD Target Detecting Device
 WHD Warhead and Warhead Section
 WQEC Weapons Quality Engineering Center

Figure 1-4-22. SIDEARM New Production/Repair from Sections



JSOW LEGEND

FIUL Fleet Issued Unit Load
 MAN Manufacturer

STO Storage
 FLEET/R Feet Return (failed bit)

Figure 1-4-23. JSOW New Production/Repair

i. SLAM/SLAM ER. Organizational Level maintenance consists of visual inspection, upload/download, AUR Built-In-Test (BIT), replacement of fins, lanyards and/or umbilicals, corrosion control/paint touch-up, AUR can/decan, and return of defective AURs to the DOP (Boeing, St. Charles, MO.) Figure 1-4-17 "SLAM/SLAM ER New Production/Repair" shows the maintenance process for fleet return assets and new production.

j. HELLFIRE. Maintenance consists of all-up-round missile testing to verify missile section failure. The maintenance philosophy for both versions of HELLFIRE missiles are Organizational to depot (DOP) "O" to "D". Missiles failing Built-In-Test (BIT) at the fleet level will be returned to the Anniston Army Depot for induction into the pipeline under a Depot Maintenance Interservice Support Agreement (DMISA).

k. TOW. Maintenance consists of minor repairs to the launch tube. Figure 1-4-18 depicts the new production through storage and issue to the fleet. TOW missiles damaged beyond the repair capability of fleet Organizational or Intermediate Level Maintenance will be disposed of in accordance with current directives.

l. WALLEYE. Maintenance consists of weapon assembly and disassembly; all-up-round missile and warhead section testing; replacement of failed sections; and replacement of certain components and minor repair within the warhead. Minor repair of damaged wings or fins is also authorized. Figure 1-4-19 shows the maintenance process for a fleet returned missile through receipt, storage, segregation, and issue, inspection testing, assembly, and reissue. Figure 1-4-20 shows the assembly phase using sections from new production, returns from the designated overhaul point, or sections determined to be satisfactory during disassembly.

m. SIDEARM. Maintenance consists of inspecting, testing, interchanging missile components, and replacing parts. The maintenance is intended to correct defects in fleet return missiles and defects discovered during inspections and tests. Required repairs, cleaning, painting, and preservation in support of interchanging operations are also authorized. Figure 1-4-21 shows the maintenance process for a fleet return missile from receipt and inspection through the assembly phase. Figure 1-4-22 depicts the missile section processing flow from receipt and the inspection, integration, testing, and final issue or disposition.

n. JSOW. Maintenance consists of AUR built-in-test (BIT) and reprogramming, BIT/reprogramming is conducted by fleet personnel or designated teams (as applicable) formed for this specific purpose. Missiles failing BIT are shipped to the designated overhaul point for repair. Figure

1-4-23 shows the maintenance process for fleet returned assets and new production.

1.4.3 Receipt, Segregation, Storage, and Issue. Receipt, segregation, storage, and issue actions required to support maintenance of air launched missiles processing is accomplished in accordance with NAVSUP P-805/P-807 (NOTAL).

1.4.4 Missile Sentencing Inspection. The missile sentencing inspection, as described in paragraph 1.1.12 is a visual external examination of palletized all-up-round missile rounds and components offloaded from a ship or otherwise returned to a weapons support facilities or naval airborne weapons maintenance unit. The purpose of the missile sentencing inspection is to identify and recertify those assets whose MDD will permit redeployment without further testing. A copy of the presentencing inspection results is necessary to properly perform the receiving inspection. That reduces the quantity of fleet return all-up-round missiles which require maintenance actions to be performed. The process takes maximum advantage of MDD expiration dates, and provides an effective tool for the management of maintenance workloads. The missile sentencing inspection is divided into three phases:

1.4.4.1 Receiving Inspection. Weapons support facilities and/or naval airborne weapons maintenance units conduct a receiving inspection on the containerized all-up-round missiles listed in paragraphs 1.4.2.2a through 1.4.2.2.n. Containers and cradles are inspected for the presence of seals, correct markings, corrosion, moisture intrusion, damage, and an MDD that will permit reissue without further testing. If all inspection items are acceptable, the missile sentencing inspection is complete and the air launched missile is ready-for-reissue. A container or cradle that is dented, crushed, punctured, or appears to have been tampered with must be opened and its contents must be inspected.

1.4.4.2 In-container Inspection. The in-container inspection verifies the material condition of the all-up-round missile prior to further sentencing, including MDD. During the inspection, maintenance personnel check the rocket motor safe and arm device for proper positioning and examine the missile skin for scratches, nicks, or gouges. If defects are found, corrective action to be performed is noted for further planning and entered in the missile logbook. When the all-up-round missile and the container meet the in-container inspection requirements, the all-up-round missile is repackaged, sealed, and is ready-for-reissue. If a defect is found which cannot be corrected through the missile sentencing inspection process, the missile and container are sentenced to the repair process for repair and recertification.

1.4.4.3 Repackaging. During the missile sentencing inspection, serviceable all-up-round missiles are repackaged

as necessary to remove any unserviceable all-up-round missiles which may have been included. All-up-round missiles with the same or similar MDDs are containerized together (depending on system) to take maximum advantage of the MDD and to provide for economical management of the workload and assets. The desiccant, humidity indicator, and packaging material are replaced as necessary. Restenciling and retagging operations are performed and the assets are then sealed. Missile sentencing inspection work content definitions and procedures for inspecting and sentencing air launched missiles are contained in the following air launched missile technical manuals:

- a. SPARROW, NAVAIR 01-265GMAD-9-3 SERIES (NOTAL).
- b. AMRAAM, NAVAIR 01-AIM-120-2 (NOTAL).
- c. SIDEWINDER, NAVAIR 01-AIM-9L/M-2.1, NAVAIR 01-80GMB-2.1 (NOTAL).
- d. PHOENIX, NAVAIR 01-AIM-54-2 (NOTAL).
- e. HARM, NAVAIR 01-AGM-88A-2, NAVAIR 01-AGM-88A-2.1, NAVAIR 01-AGM-88A-2.2 (NOTAL).
- f. MAVERICK, AW 820CE-MIB-020 (NOTAL).
- g. SIDEARM, NAVAIR 01-AGM-122A-2.1 (NOTAL).
- h. SLAM, AW-820HN-NWS-300 (Air) (NOTAL).
- i. JSOW, NAVAIR 11-140-6.2 (NOTAL).
- j. PENGUIN, NAVAIR 01-AGM-119B-3 (NOTAL).
- k. HARPOON, (WPNSTA MSI), AW-820HN-NWS-300 (AIR) (NOTAL), AW-820HN-NWS-500 (TAR-TAR) (NOTAL), AW-820HN-NWS-700 (CAN) (NOTAL), AW-820HN-NWS-800 (CAP) (NOTAL), HARPOON/SLAM/SLAM ER (Fleet/RSS&I MSI), AW-820HN-MSI-000.
- l. WALLEYE, NAVAIR 01-15MGA-4-3 (NOTAL); (WALLEYE I) NAVAIR 01-15MGB-4-2 (NOTAL) (WALLEYE II).

1.4.5 Material Received for Further Transfer. Containerized all-up-round air launched missiles and air launched missile sections or components, properly stenciled and tagged, sent to a weapons support facilities or naval airborne weapons maintenance units for further transfer to another activity need not be inspected by the weapon station except for safety considerations prior to temporary storage. If, during that inspection it is determined that maintenance actions are required on the container to assure safe and protected

transfer of the material, the missile must be repackaged in an authorized, undamaged container in accordance with approved NAVAIRSYSCOM technical manuals.

1.4.6 Paint Touchup and Cleaning

1.4.6.1 Cleaning consists of the removal of contaminants such as dirt, grease, salt spray, oil, and other elements that aid corrosion. Cleaning requires a knowledge of the materials and methods needed to remove each of these contaminants. As a general rule, the mildest cleaning method available that will work effectively is used. The corrosion manual addresses the specific procedures to be followed for each type of metal to be cleaned, as well as the proper material to be used. The corrosion control manual for air launched missiles is NAVAIR 01-1A-75 (Airborne Weapons and Associated Equipment, Consumable Material Applications and Hazardous Material Authorized Use List) (NOTAL). NAVAIR 01-1A-75 addresses the authorized materials, applications, and procedures for preventive and corrective corrosion control measures. Specifically, the corrosion manual addresses the procedures to be followed for each type of substrate to be cleaned, as well as the proper material to be used. See volume I, section 4 for further detail.

1.4.6.2 Painting at weapons support facilities and naval airborne weapons maintenance units is limited to the touchup of areas which have been damaged by abrasion, superficial scratches, or in areas where the paint was removed in order to treat corrosion. Touchup painting is limited to a maximum of 25 percent of any section or component unless specifically instructed by technical manual instructions. Painting that exceeds touchup must be performed in an authorized painting area (usually an enclosed paint booth). Maintenance personnel will clean all surfaces before applying the paint coating, ensuring that no cleaning material residue is trapped in fasteners, points, etc.; such areas can become contaminated easily and corrosion will occur. While material such as oils and sealants act as a preservative, painting is generally the most effective means of preserving metal. The corrosion manual (NAVAIR 01-1A-75) (NOTAL) lists the cleaning materials, primers, and paints used in the preservation and corrosion control of air launched missiles. Unique materials, applications, and procedures are listed in the applicable missile technical manuals. See volume I, section 4 for further detail.

1.4.7 All-Up-Round Missile and Section Testing and Test Equipment Certification. weapons support facilities and naval airborne weapons maintenance units perform electrical tests on all-up-round missiles or missile sections and components to verify compliance with test specification parameters. Testing is accomplished on COMNAVAIRSYSCOM authorized and certified air launched missile test equipment. All testing is performed in accordance with the applicable technical manual. Additionally, under acquisi-

tion reform and new maintenance initiatives, AUR missiles testing performed at both Army and contractor facilities. The test equipment used may or may not be required to be certified under existing COMNAVAIRSYSCOM directives.

1.4.8 Failure Verification. Since air launched missiles that fail the electrical test are temporarily lost from the fleet inventory, decrease asset readiness, and incur costly repairs, every attempt is made to verify faulty air launched missile sections that appear to be beyond the capability of maintenance prior to shipment to the designated overhaul point. Weapons quality engineering activities listed in figures 1-1-4 through 1-1-17 of this volume, perform sample verification testing on assigned systems. Failures that occur on air launched missile systems for which weapons quality engineering centers have no current capability will be verified by retesting as follows:

a. The failure will be verified on an alternate test set before being shipped to the designated overhaul point.

b. On air launched missile systems where the activity has only a single test set for that system, the failed air launched missile will be completely disconnected, all test connectors and interfaces will be reconnected, and retest of the air launched missile will be performed.

1.4.9 Removal and Replacement of Missile Sections. Missile sections or components that are removed from an all-up-round as a result of inspection, testing, or troubleshooting are replaced by a serviceable section drawn from stock or, in some cases, gained by a maintenance action on another all-up-round. The faulty section or component is then set aside for further screening to reduce the number of fault units entering the depot pipeline. Interchangeability of missile sections or components will be in accordance with the applicable technical manual. When the missile configuration is changed by the addition or deletion of a section or component, the appropriate logbook's maintenance data system configuration summary form must also be annotated. Separate forms apply to each missile system. Appendix A contains examples of each of these forms and also provides instructions for completing the forms.

1.4.10 Discrepancy Reporting. Discrepancy reports are initiated when a discrepancy is discovered during the performance of any of the assigned maintenance actions. Discrepancy reporting procedures are contained in volume I chapter 4.6 of this instruction.

1.4.11 Warranty Actions. The COMNAVAIRSYSCOM warranty program is discussed in detail in volume I chapter 4.3 of this instruction. In the event that a deficiency is dis-

covered during the processing of new or newly reworked material or material that is under warranty, and that deficiency is not a result of maintenance handling or processing, the item shall be considered to be in breach of warranty provisions of the contract and is therefore subject to the provisions of the warranty. Warranty claim actions shall be handled as follows:

a. A Product Quality Deficiency Report (PQDR) form (SF 368) will be used to process warranty claim actions. The SF 368 will be clearly marked "Warranty Claim Action" and will include the following (in addition to information required in volume I chapter 4.6):

(1) Date of failure (Block 4).

(2) Item serial number (Block 9).

(3) Production contract number (Block 10).

(4) Warranty expiration date (Block 22).

(5) Detailed circumstances leading to discovery of the failure (Block 22).

b. In addition to normal distribution, a copy of the completed PQDR and logbook/section will be placed in the container with the failed item and the item will be returned to the vendor for repair under the warranty provisions of the contract.

c. A copy of the PQDR will be sent to the cognizant COMNAVAIRSYSCOM (AIR-3.1) Assistant Program Manager, Logistics responsible for that item.

1.4.12 Organic Depot and Commercial Contractor Maintenance

1.4.12.1 Depot level maintenance responsibilities assigned to organic depots and commercial contractors include those actions required to maintain or restore the inherent design service levels of performance, reliability, and material condition. Depot level maintenance covers the complete rebuilding through reclamation, refurbishment, overhaul, repair, replacement, adjustment, servicing, and replacement of consumables. Figure 1-4-24 assigns the Naval Air Warfare Centers, Army depots, and commercial contractors responsible for depot level maintenance of the primary component, the guidance and control section. In some instances complete all-up-round missiles are returned to the naval aviation depot or contractor and in others only the failed section is returned.

1.4.12.2 Naval Air Warfare Centers, Army depots and commercial contractors are also responsible for all modification actions required to change or improve design levels of performance, reliability, and material. The term modification, as used in this instruction, includes alteration, conversion, engineering change, modernization, etc. All depot maintenance actions are performed in accordance with the applicable Naval Air Systems Command technical manual. Specific maintenance actions assigned to naval aviation depots and commercial contractors include the following:

a. All maintenance and modification actions necessary for the rework and repair of the air launched missile sections and components under their cognizance.

b. The manufacture of items and component parts otherwise not available when that action is deemed necessary and is appropriately authorized.

c. The provision of support services functions, including professional engineering, technology, and calibration services, and field teams to support lower level maintenance when required and directed.

1.4.13 Technical Directives. Depot level personnel are responsible for assuring that technical directives, airborne weapon bulletins, airborne weapon changes, and Notice of Ammunition Reclassifications (NAR) are complied with. They also assist in the development and verification of technical directives that ultimately affect them. This assistance includes engineering change proposal review, development of the resulting technical directive, and verification prior to implementation of the technical directive.

1.4.14 Logbook Maintenance

1.4.14.1 Maintenance activities, whether organic or commercial, are responsible for air launched missile logbook entries whenever any of the following maintenance actions are performed:

a. Modification of the air launched missile has been accomplished.

b. Technical directives such as airborne weapon bulletins and airborne weapon changes have been incorporated.

c. Maintenance has been performed.

d. Air launched missile testing has been accomplished.

e. Shipping or receiving transactions occur.

f. An age limited or discrepant component has been replaced.

g. Any configuration change is made to the air launched missile.

h. When the MDD marked on the container conflicts with the logbook MDD, the container markings take precedence. The logbook should be changed to reflect the more current MDD on the container at the first available opportunity that does not create additional workload to remove the logbook.

1.4.14.2 The Naval Air Warfare Center Weapons Division, Code 362300E at 575 I Avenue, Suite 1, Point Mugu, CA 93042-5049, has been designated as the repository for all air launched missile logbook information. Permanent files, updated periodically by maintenance data system input, are maintained for each air launched missile. Upon expenditure of the air launched missile, the logbook is sent to Commander, Naval Air Warfare Center Weapons Division, ATTN: Code 362300E (AWARS), 575 I Avenue, Suite 1, Point Mugu, CA 93042-5049. Activities receiving incomplete or missing air launched missile logs and records should contact the originating weapons support facilities or naval airborne weapons maintenance unit for the logbook, initiate a PQDR, and then contact the last user by message for the latest update or logbook replacement. If last user is unable to locate the logbook, contact the Naval Air Warfare Center Weapons Division, Code 362300E is responsible for final disposition of ALM log books in accordance with SECNAVINST 5212.5D (NOTAL).

1.4.15 Record Keeping and Reporting

1.4.15.1 Depot level maintenance is responsible for all record keeping and reporting actions related to the processing of air launched missiles. That includes logbook entries, Conventional Ammunition Integrated Management System (CAIMS) reporting requirements, local applicable directives, and maintenance data system reporting. The maintenance data system and CAIMS are described in volume I section 5.

1.4.15.2 Reportable maintenance actions performed on air launched missiles must be entered into the maintenance data system. Maintenance actions are reported on OPNAV 8600/11 (maintenance data system for air launched missile systems). Air launched missile configuration information is reported on the applicable maintenance data system configuration summary (OPNAV 8600/1 through OPNAV 8600/17) forms. Appendix A contains procedures and instructions for the completion of these forms. Maintenance actions which

require report submission include all tests, inspections, repairs, and remote actions performed on air launched missiles, sections, and components. Report the following:

- (1) Assembly of a missile:
- (2) Disassembly of a missile:
- (3) Replacement of a component, section, subassembly, or major subassembly be it non-explosive or explosive.
- (4) Performance of all tests (mechanical and electrical), inspections and repairs:
- (5) Performance of all of Technical Directives. (This includes AWC, AWB, AWCAP's and NAR's).

Reporting disassembly or remote actions caused or required by replacement of a component, section, subassembly, or major subassembly is not required unless specified by other authorized sources.

1.4.15.3 All depot level maintenance activities are responsible for updating the data contained in CAIMS. Section status reporting to CAIMS for naval aviation depots is via transaction item reporting, ammunition transaction reports, and the Serialized Lot Item Tracking System, while commercial contractors report via naval message format.

CAIMS is updated via transaction item reporting and the Serialized Lot Item Tracking System whenever there is any change in the configuration of an air launched missile.

1.4.16 Explosives Handling Personnel Qualification and Certification (Qual/Cert) Program. Depot level personnel involved with the maintenance and handling of air launched missiles must be trained, qualified, and certified to perform maintenance actions in accordance with the requirements of OPNAVINST 8020.14/MCO P8020.11 (NOTAL).

1.4.17 Maintenance Training Requirements. Maintenance training is a continuous and ongoing process, conducted to ensure that personnel who operate, maintain, and support weapons systems and associated equipments are qualified to perform their respective functions. Formal and on-the-job maintenance training, for air launched missiles processed at industrial level maintenance activities, may be augmented through the use of Engineering Technical Specialists/Fleet Weapons Support Team provided by the Naval Air Warfare Center, Weapons Division, volume I, chapter 4.4 provides procedures for requesting field service training and technical assistance. Volume I, section 6 provides additional information on all aspects of Naval Airborne Weapons Maintenance Training.

	Ford Aerospace	Raytheon Systems Corp.	General Dynamics	AFLC Ogden	Letterkenny Army Depot
SPARROW AIM-7M		X1			X
SPARROW AIM-7PI/7PII		X1			X
SPARROW AIM-7R		X1			X
AMRAAM AIM-120		X			
SIDEWINDER AIM-9L/9M	X1	X1			X
SLAM AGM-84E-1					X7
SLAM ER AGM-84H-1					X7
MAVERICK AGM-65E				X5	X6,7
MAVERICK AGM-65F				X5	X6,7
WALLEYE		X			
TOMAHAWK			X		
HARM AGM-88		X			X
JSOW AGM-154A, AGM-154B, AGM-154C		X			
Notes: 1. Co-producers of AIM/RIM-7M, AIM/RIM-7PI, AIM/RIM-7PII, AIM/RIM-7R, and AIM-9L/M, assigned designated overhaul point responsibilities for air launched missiles manufactured by their facility. 2. Norsk Forsvarsteknologi is assigned designated overhaul point responsibilities for the PENGUIN weapon system and missile test equipment. 3. There is no depot level maintenance for the TOW missile. Assets which are beyond capability of maintenance at Intermediate level maintenance are disposed of on-site. 4. The LLC is a joint company formed from Lockheed, Martin and Rockwell. 5. AUR and Center Aft Section. 6. Guidance and Control Section. 7. MAVERICK/SLAM/SLAM ER Seeker repair.					

Figure 1-4-24. Assignment of Air Launched Missile Responsibilities to Naval Air Warfare Centers, Army Depots and Commercial Contractors

	Norsk Forsvarsteknologi	Boeing Aerospace	Naval Air Warfare Center Weapon Division	limited Liability Co. (LLC) 4
PENGUIN AGM-119B	X2			
HARPOON AGM-84D-1		X		
SLAM AGM-84E-1		X		
SLAM-ER AGM-84H-1		X		
SIDEARM AGM-122A			X6	
TOW BGM-713				
HELLFIRE AGM-114B AGM-114K				X4
Notes: 1. Co-producers of AIM/RIM-7M, AIM/RIM-7PI, AIM/RIM-7PII, AIM/RIM-7R, AIM-9L/M, and AIM-120 assigned designated overhaul point responsibilities for air launched missiles manufactured by their facility. 2. Norsk Forsvarsteknologi is assigned designated overhaul point responsibilities for the PENGUIN weapon system and missile test equipment. 3. There is no depot level maintenance for the TOW missile. Assets which are beyond capability of maintenance at Intermediate level maintenance are disposed of on-site. 4. The LLC is a joint company formed from Lockheed, Martin and Rockwell. 5. AUR and Center Aft Section. 6. Guidance and Control Section. 7. MAVERICK/SLAM/SLAM ER Seeker repair.				

Figure 1-4-24 Assignment of Air Launched Missile Responsibilities to Naval Air Warfare Centers, Army Depots, and Commercial Contractors (Cont'd)

SECTION 2

Airborne Ordnance/Ammunition

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CHAPTER 2.1

Introduction

2.1.1 General. This section addresses maintenance program management of air delivered ordnance and ammunition. During a weapon system's life cycle phase, maintenance program management is a critical management function due to the impact of maintenance requirements on the effective use of personnel, materials, facilities, and fiscal resources. Maintenance program management functions include maintenance planning, coordinating, budgeting, and evaluating program progress. Each specific category of ordnance and ammunition is assigned a two-digit Navy stock number prefix that identifies technical and inventory management responsibilities. Conventional expendable airborne ordnance is assigned cognizance code 2E and is under the technical cognizance of the Naval Air Systems Command (COMNAVAIRSYSCOM). Inventory management responsibilities are assigned to the Naval Ammunition Logistics Center (NAVAMMOLOGCEN).

2.1.2 Responsibilities

2.1.2.1 The Assistant Commander, Logistics and Fleet Support (AIR-3.0), through the Airborne Weapons Logistics Division (AIR-3.1), is responsible for the program management and funding of airborne weapons maintenance programs. COMNAVAIRSYSCOM (AIR-3.1) is responsible for management, integrated logistics support, and maintenance engineering functions pertinent to airborne weapons systems under COMNAVAIRSYSCOM cognizance.

2.1.2.2 Assistant Program Managers, Logistics (APML) within COMNAVAIRSYSCOM (AIR-3.1) plan and implement integrated logistics support and project support management activities for major weapons systems. APMLs are directly responsible to weapons system program managers, for the logistics aspects of acquisition programs from inception through deployment and eventual phaseout from the active inventory. COMNAVAIRSYSCOM (AIR-3.1) APMLs are directly responsible to the Director AIR-3.1 for the effective planning and development of operationally effective and cost-effective support systems for acquisition programs.

2.1.2.3 Volume I chapter 2.2 and 2.3 of this instruction defines maintenance functions and responsibilities that apply to airborne ordnance and ammunition. Chapters 2.2, 2.3, and 2.4 describe organizational, intermediate, and depot level maintenance actions that apply to airborne ordnance and ammunition.

2.1.3 Applicability. Paragraphs 2.1.4 through 2.1.13 describe the airborne ordnance and ammunition assigned 2E cognizance. A brief overview of each munition family is provided, including their intended operational uses.

2.1.4 Bombs and Associated Components. The general category of bombs includes general purpose bombs/special purpose bombs, cluster bombs, fire bombs, guided bomb units, GPS/INS guided bombs, practice bombs, and associated components, such as mechanical and electrical fuzes, target detecting devices, boosters, igniters, and fins.

2.1.4.1 MK 80 series Low Drag General Purpose (LDGP) bombs are used in the majority of bombing operations where maximum blast and explosive effects are desired. LDGP bombs are designed to be aerodynamically streamlined. Their cases are relatively light and approximately 45 percent of their complete weight is explosive. General purpose bombs may use both nose and tail fuzes and conical or retarded tail fins. Some are thermally protected for use on aircraft carriers. The thermally protected MK 80 series bomb was developed to increase the cookoff time and decrease the reaction of bombs when engulfed in a fuel fire. The BLU-110A/B and BLU-111A/B thermally protected bombs are identical to the MK 83 and MK 84 thermally protected bombs, respectively, with the exception of the explosive filler. The BLU series bomb bodies use PBNX-109 as explosive filler. The BLU-109A/B used with the GBU-24 and GBU-31(V)4/B is a special purpose bomb comprised of steel alloy used for hardened targets. The MK 82 and MK 83 series LDGP bombs underwent a Product Improvement Initiative (PII) which entailed filling the bomb cases with a less sensitive explosive. When so filled the MK 82 and MK 83 bombs are redesignated BLU-111/B and BLU-110/B, respectively. Figure 2-1-1 and 2-1-2 shows the different configurations for MK 80 LDGP bombs and BLU-111A/B A and BLU-110A/B.

2.1.4.2 Cluster bombs are dispensers which contain a number of bomblets for use against armored vehicles, light materials, personnel, or small craft. As the weapon travels along its trajectory, a fuze functions at a predetermined height/time relative to the target and the bomblets are released to free-fall to the target area. These bomblets detonate on impact, after a preset time delay, or when disturbed. Cluster bombs presently in the Navy inventory are the MK 20 series CBU-99 and CBU-100 series ROCKEYE.

2-1-2

	MK 82		MK 83		MK 84		
Weight Class (lb)	500		1000		2000		
Effective MODs	0 & 1	2	4	5	4	6	7
Weight of Explosive Charge (lb)	192.0	180.0	445.0	375.0	945.0	945.0	945.0
Adapter-Booster Nose	M148/T45E7 F372	M148/E1 Thermally Protected F392	M148/T45E7 F372	M148/E1 Thermally Protected F392	M148/T45E7 F372	M148/E1 Thermally Protected F392	M148/T45E7 F372
Conical Fin	MK 82 MAU-93 BSU-33	MK 82 MAU-93 BSU-33	MK 83	MK 83	MK 84	MK 84	MK 84
Retarding Fin	MK 15 MODs 4, 5, 6 BSU-86	MK 15 MODs 4, 5, 6 BSU-86	BSU-85B	BSU-85B			

Figure 2-1-1. MK 80 LDGP Configurations

	BLU-111A/B	BLU-110A/B
Weight Class (lb)	500	1000
Weight of Explosive Charge (lb)	180.0	375.0
Adapter-Booster Nose	M148/E1 Thermally Protected F392	M148/E1 Thermally Protected F392
Conical Fin	MK 82 MAU-93 BSU-33	MK 83
Retarding Fin	MK 15 MODs 4, 6 BSU-86	BSU-85B

Figure 2-1-2. BLU-110A/B / BLU-111A/B Configurations

2.1.4.3 A fire bomb is a thin skinned container of fuel gel designed for use against dug-in troops, supply installations, wooden structures, and land convoys. Fire bombs rupture on impact and spread burning fuel gel on surrounding objects. MK 13 Mod 0 igniters are used to ignite the fuel gel mixture upon impact. The MK 77 500-pound fire bomb is the only fire bomb now in service.

2.1.4.4 Guided bomb unit (Paveway II GBU-10 / 12 / 16 series are LDGP MK 80 series bombs modified and Paveway III GBU-24 series are a special purpose bomb (BLU-109A/B for use against hardened targets) to detect and guide to a target illuminated by a laser beam. This modification is accomplished by mounting a laser guidance kit to the bomb body. The kit consists of a computer control group which attaches to the nose of the bomb and an airfoil group (wing assembly and guidance fins). The computer control group detects an illuminated target and provides guidance information to the movable guidance fins to control the trajectory of the weapon. Guided bomb units are used to strike specific targets where extreme accuracy is required, such as tanks, bridges, etc. Figure 2-1-3 lists guided bomb configurations.

2.1.4.4.1 The Joint Direct Attack Munition (JDAM) is a series of accurate adverse weather guided tail kits, guidance sets, used on current general and special purpose bombs in conventional strike environments. The Guidance Sets for these weapons are used with the MK 83, MK 84, BLU-109 and BLU-110 general and special purpose bombs combined with appropriate fuzes to provide accurate conventional strike capability from very low to very high altitudes. The GBU-31, GBU-32 and GBU-35 munitions use a Global Positioning System (GPS) aided Inertial Navigation System (INS) to guide the weapon to a pre-planned set of target location coordinates while achieving planned terminal impact parameters such as impact angle and azimuth. Weapon maneuverability and range are enhanced by fixed aerodynamic surfaces (mid-body strakes) attached to the bomb body. Mission plans are loaded to the host aircraft prior to take off and include release envelope, target coordinates and weapon terminal parameters. The weapon automatically begins its initialization process during captive carry when power is applied by the aircraft. The weapon performs bit, and aligns its INS with the host aircraft's system. Targeting data is automatically down loaded to the weapon from the host aircraft. When the host aircraft reaches the release point within the Launch Acceptable Region (LAR), the weapon is released. JDAM GBUs use the FMU-152/B and FMU-143E/B fuzes and are backward compatible with the FMU-139 series fuzes with or without FZU-48 in some configurations. See figure 2-1-4 JDAM GBU configurations.

2.1.4.5 Practice bombs are used to simulate the same ballistic properties of service type bombs. They are manufactured as either solid cast metal bodies or thin sheet metal containers. Since practice bombs contain no explosive filler, a practice bomb signal cartridge (smoke) is used for visual observation of weapon target impact.

2.1.4.5.1 Practice bombs provide a low cost training device for pilot and ground handling crews. Due to the relatively small amount of explosive material in practice bombs (small signal charge), the availability of ranges for training is greatly increased.

2.1.4.5.2 The general types of practice bombs are subcaliber or full scale practice bombs. Subcaliber means that the practice bomb is much smaller in size and weight than the service bomb it simulates. The MK 76, MK 106 and BDU-48/B are subcaliber practice bombs. The BDU-45 inert loaded bombs are full scale practice bombs. Full scale practice bombs are representative of service bombs in size and weight.

2.1.4.5.3 Although not classified as practice bombs, the MK 80 series inert filled LDGP bombs are used extensively for practice bombing. These bombs are physically the same as the MK 80 series LDGP service bombs except that they do not contain any explosive filler and are painted blue (may be olive drab color with blue stripes). These bombs provide training for assembly and loading crews, as well as training for the pilots.

2.1.4.5.4 The Laser Guided Training Round (LGTR) provides a low cost training device permitting aircrews to realistically practice the employment of Paveway II Guided Bomb Units. The LGTR duplicates the release envelope, terminal guidance, and closely matches the time of flight characteristics of the GBU-16/B (MK 83 Paveway LGB). The LGTR is comprised of two sections (Guidance Control Section and Payload Section). The Guidance Control Section consists of the seeker, the signal processor, control system, and power supply. The Payload Section consists of the ring airfoil at the trailing edge which also houses the signal cartridges (MK 4 Mods or CXU-3A/B2) and the ejector assembly. The LGTR II is identical to the LGTR, except that it duplicates the release envelope, terminal guidance, and closely matches the time of flight characteristics of the GBU-24B/B.

2.1.4.6 Components required to complete the assembly of a bomb into a complete round include various mechanical and electrical fuzes, sensing elements and target detecting devices, boosters, igniters, and fins.

Nomenclature	Dimension (Inches)		Wing Span (Extended) (Inches)	Gross Weight (Lbs)
	Length	Diameter		
Guided General Purpose Bomb GBU-12C/B or GBU-12D/B	131.15	18.00	51.99	610.05
MK 82/BLU-111A/B LDGP Bomb Body	53.36	10.75		475.00
Computer Control Group MAU-169 series or WCU-10 series	41.54	8.00		39.04
Airfoil Group MXU-650 series Fuze MK 376 or FMU-139 Arming Safety Switch MK 122 MOD 0	29.88	18.00	51.99	96.11
Guided General Purpose Bomb GBU-16A/B or GBU-16B/B	144.87	26.00	63.63	1110.06
MK 83/BLU-110A/B LDGP Bomb Body	69.88	14.00		930.00
Computer Control Group MAU-169 series or WCU-10 series	41.54	8.00		39.40
Airfoil Group MXU-667 series Fuze MK 376 or FMU-139 Arming Safety Switch MK 122 MOD 0	36.64	26.00	63.63	140.66
Guided General Purpose Bomb GBU-10D/B or GBU-10E/B	169.90	28.00	65.63	2105.56

Figure 2-1-3. Guided Bomb Unit Configurations

Guided General Purpose Bomb	Dimension (Inches)		Wing Span (Extended) (Inches)	Gross Weight (Lbs)
	Length	Diameter		
GBU-10D/B & GBU-10E/B	169.90	28.00	65.63	2081.60
MK 84 LDGP Bomb Body	90.64	18.00	1900	2037.00
Computer Control Group	41.54	8.00		39.40
MAU-169 series or WCU-10 series				
Airfoil Group MXU-651/B	34.45	28.00	65.63	166.16
Fuze MK 376 or FMU-139				
Arming Safety Switch MK 122 MOD 0				
Laser Guided Training Round LGTR/LGTR II	70.62	4.00	19.00	85.00

Figure 2-1-3 Guided Bomb Unit Configurations (Cont'd)

Nomenclature	Dimension (Inches)		Wing Span (Extended) (Inches)	Gross Weight (Lbs)
	Length	Diameter		
Hard Target Penetrator Laser Guided Bomb GBU-24B/B	169.69	36.00	80.36	2392.00
BLU-109A/B Bomb	98.54	14.50	-	1946.10
Guidance and Control Unit WGU-39/B	43.09	8.00	-	81.60
Airfoil Group..... BSU-84/B or BSU-84A/B	37.47	36.00	80.36	255.20
Adapter Group ADG-770/B				
Hardback.....	52.00	-	-	43.90
FZU Extender.....	1.80	2.25	-	0.40
Lug Sleeve (2).....	-	5.00	-	3.90
Aft Fairing.....	8.00	17.70	-	4.20
MK 3 Lugs (2).....	-	2.50	-	5.20
Adapter Spacer.....	-	5.50	-	-
Fuze Assembly				
FMU-143 E/B.....	8.00	3.00	-	3.64
Aft Retainer.....	1.75	3.50	-	1.10
FZU-32B/B Initiator, Power Generator				

Figure 2-1-3. Guided Bomb Unit Configurations (Cont'd)

2-1-2

	MK 82		MK 83		MK 84		
Weight Class (lb)	500		1000		2000		
Effective MODs	0 & 1	2	4	5	4	6	7
Weight of Explosive Charge (lb)	192.0	180.0	445.0	375.0	945.0	945.0	945.0
Adapter-Booster Nose	M148/T45E7 F372	M148/E1 Thermally Protected F392	M148/T45E7 F372	M148/E1 Thermally Protected F392	M148/T45E7 F372	M148/E1 Thermally Protected F392	M148/T45E7 F372
Conical Fin	MK 82 MAU-93 BSU-33	MK 82 MAU-93 BSU-33	MK 83	MK 83	MK 84	MK 84	MK 84
Retarding Fin	MK 15 MODs 4, 5, 6 BSU-86	MK 15 MODs 4, 5, 6 BSU-86	BSU-85B	BSU-85B			

Figure 2-1-1. MK 80 LDGP Configurations

Item	Service	Warhead*						Guidance Set				Weights			Fuzes/Components																		
		M K 8 4	B L U 1 0 9	M K 8 3	B L U 1 1 0	GBU Lenght Inches.	LUG Inches	K M U 5 5 6 / B	K M U 5 5 7 / B	K M U 5 5 8 / B	K M U 5 5 9 / B	GBU	WAR- HEAD	GUID. SET	F M U 1 5 2 / B	F M U 1 3 9 / B	F M U 1 4 3 / B	F M U 1 4 3 E / B	D S U 3 3 A / B	D S U 3 3 B / B	M K 1 2 2 / M O D 0	F Z U 3 2 B / B	F Z U 4 8 / B	F Z U 5 5 / B	F Z U 3 2 / C A B L E	F Z U 4 8 / C A B L E	F Z U 5 5 / C A B L E	M K 6 5 / M O D 0	F Z U 5 5 / E X- T E N D E R	N O S E P L U G			
GBU-31(V)1/B	USAF	X				152.72	30	X				2065	1919	146	T				N	N			X			X						X	
																B			N	N		X			X							X	
GBU-31(V)2/B	NAVY	X				152.72	30	X				2085	1939	146	T					N	X											X	
																T				N	X												X
GBU-31(V)3/B	USAF		X			148.60	30		X			2137.5	1942	195.5	T								X			X			X			X	
																	T					X			X								X
GBU-31(V)4/B	NAVY		X			148.60	30			X		2161.5	1962	199.5	T						X								X				
																		T				X			X								X
GBU-32(V)1/B	USAF			X		119.49	14				X	1016	921	95	T				N	N			X			X			X				X
																B			N	N		X			X								X
GBU-32(V)2/B	NAVY			X		119.49	14				X	1031	936	95	T					N	X												X
																T				N	X												X
GBU-35(V)1/B	NAVY				X	119.49	14				X	1031	936	95	T					N	X												X
																T				N	X												X
NOTES:																																	
* Navy Warheads are thermal coated for shipboard operations.																																	
N = NOSE, T = TAIL, B = BOTH (NOSE AND/OR TAIL).																																	
Operational Configuration - When sensor is installed in nose, Nose Plug/Support Cup is not used.																																	

Figure 2-1-4. JDAM GBU Configurations Configurations

2.1.4.6.1 Detonation of a bomb is controlled by the action of a fuze. A fuze may be defined as a device for initiating the detonation of an explosive charge at the proper time after certain conditions have been fulfilled. A bomb fuze can be a mechanical or an electrical device that provides the sensitive explosive elements (the primer and detonator) and the necessary mechanical or electrical action to detonate the main burster charge.

2.1.4.6.2 The Navy uses the M904 mechanical nose fuze with the M9 delay element and the MK 376 or FMU-139 series electric tail fuze in LDGP bombs. The FMU-152/B Joint Programmable fuze is scheduled to replace the MK 376 and FMU-139 electric tail fuze. The FMU-143E/B tail fuze is used with the FZU-32B/B initiator for the GBU-24 series. A FZU is an electrical generator power source for electronic fuzes. It is not used with mechanical fuzes. The only FZUs in Navy inventory are FZU-48/B which can be used in a variant of the GBU-31(V)4/B and the FZU-32B/B which is used with the GBU-31(V)4/B as well as the GBU-24B/B Guided Bomb Unit. The DSU-33B/B is used with the GBU-31(V)2/B, GBU-322/B, and GBU-35(V)1/B. The MK 43 MOD 0 target detecting device provides air-burst capability for electrically fused MK 80 series bombs. The DSU-33B/B proximity sensor is scheduled to replace the MK 43 Mod 0 TDD. Other fuzes are used with specialized bombs such as cluster bombs and fire bombs. The MK 339 MOD 1 mechanical time fuzes and FMU-140 series electronic fuze are used in CBUs. The MK 77 fire bomb utilizes the MK 13 MOD 0 initiators, which consist of a MK 343 MOD 0 fuze and a MK 273 MOD 1 ignitor. The MK 13 MOD 0 initiator is assembled, stored, and shipped as a unit, and used with the MK 77 Mod 5 Fire bomb. The DSU-33A/B is an electrical nose sensor that interfaces with the M117 and MK 80 series general purpose bombs, which will be equipped with the FMU-139A/B fuze. The FMU-152/B is a nullification, multiple delay advanced fuze system with hardened target capability that provides safeing, in-flight cockpit selection, and arming and fuzing functions for general purpose and penetrating, unitary warheads. The MK 346 Mechanical Time Fuze and Tail Adapter Booster M150/T46 series, with MK 82 series, BLU-111A/B GP Bombs, require Fuze Arming Assembly MK 5 Mods 1/2 and MK 83 series BLU-110A/B GP Bombs with MK 3 Mod 1 Fuze Arming Assembly and Thermal Shield MK 68 Mod 0 when used Thermally Protected Bombs. See figure 2-1-5 for bomb fuze compatibility chart.

2.1.4.7 Two types of fin assemblies are used with the LDGP bombs. A conical fin is used for unretarded delivery and a retarding fin can be used for either retarded or non-retarded drops. The MK 80 series conical fin assembly is used to control the flight of the bomb after release from the aircraft to ensure the bomb will follow a predictable path of descent

and impact the target nose first. Retarding fins used with LDGP bombs provide an aircraft with the capability of delivering bombs at high speed and low altitude without the normally associated danger from ricocheting bombs or fragments. It presents a low drag configuration when in the unretarded mode and a high drag configuration when in the retarded mode.

2.1.5 Aircraft Gun Ammunition. Aircraft gun ammunition is developed for specific types of aircraft-mounted guns. M55 series and PGU series 20-MM ammunition for the M61A1 and M197 guns, MK 100 series ammunition for the MK 11 and MK 12 guns, and PGU series 25-MM ammunition for the A/A49E-10 gun system are the larger caliber types currently in the Navy inventory. Each type of aircraft gun ammunition (M55, MK 100, PGU series) consists of various types of cartridges developed for specific applications, including test cartridges, dummy cartridges, target practice, target practice-tracer, armor piercing incendiary, high-explosive incendiary, and semi-armor piercing, high-explosive incendiary. Aircraft gun ammunition also includes small caliber ammunition used in helicopter gun systems. The .50 caliber XM-218 aircraft machine gun fires armor piercing, armor piercing incendiary, incendiary, and tracer ammunition. Blank and dummy rounds are also used for training and maintenance. Helicopter weapons systems also include the GAU-2B/A and the M60 gun systems. The systems use standard 7.62-MM ammunition, including armor piercing, ball, tracer, and dummy rounds.

2.1.6 Cartridges and Cartridge Actuated Devices. Cartridges and Cartridge Actuated Devices (CAD) are utilized for many applications because of their high reliability and ease of maintenance. Cartridges are used to operate bomb rack ejection systems, missile launchers, various dispensers, and to perform several functions in aircrew escape systems. Other types of cartridges are used to provide delay functions in various systems and to actuate aircraft fire extinguisher systems and in airborne fuel transfer stores. Types of cartridges include the MK 1 MOD 3 impulse cartridge, used for actuating a refueling hose guillotine in an inflight emergency to sever the hose; the MK 2 MOD 1 impulse cartridge, used in bomb racks for release and ejection of stores from an aircraft during flight; the MK 19 MOD 0 impulse cartridge, used in bomb racks to provide emergency release capabilities; and the MK 23 MOD 0 cartridge, used to actuate the cable cutting device for helicopter tow reels. Other applications for cartridges include providing a power source for ejecting decoy flares from dispensers. The CCU-63 cartridge is used for this purpose. Numerous other CADs are in the Navy inventory. Refer to NAVAIR 11-100-1.1 (CADs for Aircraft and Associated Equipment) for more information and complete listings.

2-1-10

Fuzes			Bombs							
			MK 80 Bombs						Special Purpose	
Numerical Designation	Type	Location	LDGP- 500 Lb	LDGP- 1000 Lb	LDGP- 2000 Lb	Thermally Protected			Fire Bomb 500 Lb	Bomb 2000 Lb
						LDGP- 500 Lb	LDGP- 1000 Lb	LDGP- 2000 Lb		
FMU-139/B, A/B, B/B FMU-143E/B MK 376 MOD 0 M904E2/E3 M904E4 thermally protected MK 43 MOD 0 TDD	Elec	Tail	MK 82 MOD 0, 1, BLU- 111A/B A	MK 83, BLU- 110A/B A	MK 84 A	MK 82 MOD 2 A	MK 83 A	MK 84 A	MK 77 MOD 5 MK-77 MOD 4	BLU- 109 A/B A
	Elec	Tail	A	A	A	A	A	A		
	Mech	Nose	A	A	A	A*	A*	A*		
	Mech	Nose	A	A	A	A*	A*	A*		
	VT	Nose	S	S	S	S	S	S		
DSU-33B/B, Prox Sensor MK 13 Initiator**	Mech	Side	S	S	S	S	S	S	A	
* Authorized combinations but not recommended due to degradation of cookoff time. ** Fuze MK 343 MOD 0 and Igniter MK 273 MOD 1, preassembled. A - Authorized Combinations S - Requires Electric Tail Fuze										

Figure 2-1-5. Bomb Fuze Compatibility Chart

2.1.7 Aircraft Rockets, Rocket Launchers, and Jet/Rocket Assisted Takeoff Rocket Motors. Aircraft rockets presently in use include the 2.75-inch Folding Fin Aircraft Rocket (FFAR), and the 5.00-inch ZUNI FFAR. Various rocket fuzes, warheads, and rocket motors make up the assembled rounds. All present day rockets are carried and fired from bomb rack-mounted launchers, such as the LAU-10 ZUNI launcher for 5.00-inch rockets, the LAU-61 and LAU-68, series launchers for the 2.75-inch rocket.

2.1.7.1 Rocket fuzes are classified according to their location in the warhead; that is, nose fuze or base fuze. They may be further classified by mode of operation such as impact firing, mechanical time, or proximity.

2.1.7.2 Impact firing fuzes are fuzes that function when the rocket strikes a target. MK 352 and M423 fuzes are of that type.

2.1.7.3 Mechanical time fuzes are fuzes that function by the action of a mechanical timer. Such fuzes contain a safety and arming device and a clock mechanism.

2.1.7.4 Acceleration and deceleration fuzes are similar to impact and time fuzes in that they require acceleration for a given time to complete the arming cycle. After the arming cycle is complete and when the rocket velocity begins to drop, deceleration causes the fuze to function.

2.1.7.5 Variable time proximity fuzes, such as the M414A1 and MK 93, are those fuzes wherein initiation occurs by sensing, usually by electronic means, the presence and distance of a target. Proximity fuzes are primarily used in air-to-ground operations where air bursts above the target are desired. Such fuzes are not suitable for use against targets which require penetration and detonation within the target for effective destruction.

2.1.7.6 Different tactical requirements demand specific types of rocket warheads to be used with airborne rockets. The warheads are broadly classified as high explosive, flechette, smoke, flare, and practice. Warheads for the 2.75-inch rockets are normally received with the fuze installed.

2.1.7.6.1 High Explosive Fragmentation (FRAG) warheads are designed to be effective against personnel and lightly armored targets. The warhead explosive is detonated by a point detonating or proximity fuze. The MK 1 MOD 5 is a high-explosive fragmentation warhead.

2.1.7.6.2 High-Explosive Antitank (HEAT) warheads are designed to be effective against armored targets such as tanks, bunkers, armored vehicles, etc. The warheads contain a shaped charge which when detonated produces a high-en-

ergy jet that penetrates the armored target. The MK 5 MOD 0 is a high explosive antitank warhead.

2.1.7.6.3 Smoke warheads, such as the M156, are designed to produce a volume of heavy smoke for target marking. The warhead contains a burster tube of explosive which bursts the walls of the warhead, dispersing the smoke.

2.1.7.6.4 Flare warheads, such as the MK 33, are designed to provide illumination for tactical operations. These warheads consist of a delay action fuze, illuminating candle, and parachute assembly.

2.1.7.6.5 Flechette warheads are designed to be effective against personnel and lightly armored targets. These warheads contain a large number of small arrow-shaped projectiles. A small explosive charge in the warhead dispenses the flechettes after rocket motor burnout.

2.1.7.6.6 Practice warheads, such as the MK 6 MOD 7, are either dummy configurations or inert-loaded service warheads in which the weight and placement of an inert filler gives the practice warhead the same ballistic characteristics as those of the explosive-loaded service warhead.

2.1.7.7 Rocket motors currently used in the 2.75-inch and 5.00-inch air launched rocket systems are solid propellant, cartridge-loaded grain configurations utilizing folding fins. The propellant grain in most rocket motors is an internal burning, star perforation grain made from double-base propellant. The star perforation is designed to produce a nearly constant thrust level. The external portion of the grain is covered with an inhibitor to prevent burning on the surface. The nozzle and fin assembly attaches to the aft end of the motor tube. The nozzle and fin assembly consists of a nozzle plate, four nozzle inserts, a fin-actuating mechanism, four fins, and a fin retainer and contact disc. The MK 4, MK 40, and MK 66 motors are used with the 2.75-inch. The MK 16 and MK 71 motors are used with 5.00-inch ZUNI rockets.

2.1.7.8 Aircraft rockets are delivered to user activities loaded in airborne rocket launchers. These rocket launchers are a combination shipping, storage, and launching container. The launchers have a rotary stepper-switch type intervalometer which provides either a single or ripple fire capability. The LAU-61 and LAU-69 launcher contains 19 2.75-inch FFAR. The LAU-68 contains seven 2.75-inch FFAR. Four 5.00-inch ZUNI rockets are carried and launched from the LAU-10 series rocket launcher.

2.1.7.9 Jet Assisted Takeoff (JATO) Rocket Assisted Takeoff (RATO) rocket motors are primarily used to provide auxiliary thrust to assist heavily loaded aircraft during takeoff. Their purpose is to augment the thrust obtainable from the basic aircraft propulsion system, extending the capability of the aircraft for short takeoff, and reducing the limitations on gross weight, payload, and range of an aircraft.

Other applications provide launching assistance to target drones, remotely piloted vehicles (RPV), and propulsion for rocket test sleds. JATO rocket motors MK 6 and all modifications, MK 7 and all modifications, and MK 25 and all modifications are used for aircraft. The MK 23 JATO motor is used to provide the means of propulsion for test vehicles and sleds and the initial propulsion for drone aircraft. JATO rocket motors and MK 91 and MK 117 are used primarily for launching target drones. RATO rocket motor MK 125 is used for launching remotely piloted vehicles.

2.1.8 Propellant Actuated Devices. Propellant Actuated Devices (PADs) components include rocket motors, rocket catapults and tubes, and various cartridges. These items are designed to explosively remove the ejection seat and aircrewman from an aircraft, stabilize the trajectory of the man and seat combination, separate the aircrewman from the ejection seat, and assist in the opening of the parachute. Various impulse cartridges and mild detonating cord systems for canopy and egress hatch removal are also included. Typical PADs and their applications include the MK 19 MOD 0 impulse cartridge, which is used to unlock and remove the canopy from an aircraft prior to the ejection of the seat in an emergency escape, and the MK 103 MOD 0 ejection seat cartridge, used to actuate a telescoping catapult to eject the seat and pilot during an emergency. Also included are the detonator cord assemblies for emergency egress systems in various aircraft which provide aircraft and canopy hatch separation and seat rocket motors, such as the MK 76 MOD 0, which is used in the A-6E aircraft to eject the aircrew in an emergency situation. NAVAIR 11-85-1 provides a complete listing of PADs.

2.1.9 Pyrotechnic, Screening, and Marking Devices. The pyrotechnic, screening, and marking devices currently available for fleet use contain combustible chemicals which, when ignited, generate a flame, flash, smoke, sound display, or combination of these effects. These items are used for a variety of purposes, including visual and audible signaling, area and target illumination, reference point marking, indication of practice weapon impact or fuze action, tracking, jet engine restarting, and smoke-screen generation. Pyrotechnics include the MK 45 and the LUU-2B aircraft parachute flares. These devices are used to provide nighttime illumination of surface areas in search and attack operations. They are carried and dispensed from the SUU-44 or the SUU-25 stores dispensers. The dispensers can also drop sonobuoys and other stores. Marking devices include the MK 25 and MK 58 Marine Location Markers (MLM). The MK 25 MLM is used to provide a surface reference point primarily for antisubmarine warfare operations. It provides both flame and smoke for approximately 15 minutes. It can be launched by hand or by retro-ejector. The MK 58 MLM provides a long-burning reference point capability for antisubmarine

operations. The MK 58 burns for approximately 40 to 60 minutes. This MLM is launched by hand or from aircraft bomb racks.

2.1.10 Airborne Electronic Warfare Expendable Countermeasures. Countermeasure devices include decoy flares, chaff, and active expendable decoys usually dispensed from an aircraft to defeat enemy radar by producing numerous false targets, or to provide a means of decoying missile seeker systems away from the intended target. Countermeasures include the MK 46 MODs 1A and 1C decoy flare which is dispensed from the AN/ALE-29, AN/ALE-37A, or AN/ALE-39 dispensing sets. When launched, this flare generates intense heat to act as a decoy for a heat seeking missile system. The RT-1489/ALE (GEN-X) expendable decoy is a small terminal radio frequency threat countermeasure. It is launched from the ALE series launchers. The decoy receives a radio frequency signal from a recognized threat and then transmits radio frequency energy to counter airborne and landbased semiactive homing missiles. Chaff is used to confuse enemy radar systems by providing numerous false targets. Chaff is composed of tiny strips of metallic foil which, when ejected from the ALE series launchers, produce blooms which appear as targets on a radar scope. Chaff is manufactured in various configurations for different tactical uses.

2.1.11 Underwater Acoustic Devices. Signals, Underwater Sound (SUS) are expendable devices used to produce a powerful source of underwater acoustic energy, either explosively or electronically. This energy (sound) is used to provide various capabilities for antisubmarine warfare, search and rescue operations, aircraft-to-submarine communications, and oceanographic survey. The SUS are hand- or dispenser-launched from helicopters, antisubmarine, and patrol aircraft. Antisubmarine warfare tactics utilize explosive echo ranging as a means of submarine detection and tracking. MK 61 and MK 78 SUS are used for this purpose. MK 92 SUS is used for training exercises, as are the dummy SUS MK 95 and TAU-192/B. The MK 84 SUS is used for submarine communications or as attack signals during antisubmarine warfare training or tactical exercises. This SUS produces a selectable underwater electro-acoustic code recognizable by submarine passive sonars or underwater telephones.

2.1.12 Sonobuoy. The AN/SSQ-110 Extended Range Sonobuoy is an aircraft launched expendable device used to locate underwater vehicles. It is configured with a windflap/parachute, a saltwater-activated-chloride battery, electronics for transmitting and receiving electromagnetic waves, and two explosive payloads. The AN/SSQ-110 is 36 inches in length, 4.87 inches in diameter, and weighs 34.9 pounds.

2.1.13 Maintenance Philosophy. Airborne ordnance and ammunition employs relatively simple, rugged, and reliable

construction in order to withstand the rigors of extensive handling and high speed flight environments. Unlike air launched missiles, airborne ordnance and ammunition has no requirement to be returned to a naval weapons station or naval airborne weapons maintenance unit for periodic testing. Once issued to a ship or weapons department, airborne ordnance and ammunition remains in the custody of that activity until it is issued to a fleet unit and is expended; suspended from service by action of a notice of ammunition reclassification; or transferred to another custodian as directed by higher authority. Maintenance processes at each of the three maintenance levels described in volume I, chapter 1.2 are designed to assure that all airborne ordnance and ammunition is maintained at the highest level of readiness, safety, and reliability.

2.1.14 Conventional Ordnance Performance Evaluation

2.1.14.1 The Conventional Ordnance Performance Evaluation (COPE) program has been established to assess the performance of live ordnance expended by fleet units. The complete weapon system is assessed, including the aircraft, weapon control systems, suspension and release mechanisms, ground support equipment, expendable ordnance as well as personnel (maintenance, ground, and air). The COPE program encompasses:

- a. On-site support for large scale Navy and Marine Corps exercises involving the expenditure of ordnance and ammunition items.
- b. Data collection and integration into COPE data base.
- c. In-depth analysis of performance data to accurately assess weapon readiness and identify problem areas.
- d. Problem area followup and monitoring of corrective actions.
- e. Failure analysis investigations of identified problems and deficiencies in accordance with the Airborne Weapons Corrective Action Program procedures.

2.1.14.2 Responsibilities

- a. COMNAVAIRSYSCOM (AIR-3.1) manages the logistics program, budgets for, and provides resources to the

Quality Engineering Management Office (QEMO) Naval Surface Warfare Center Division Crane, IN.

- b. Under the direction of the QEMO Naval Surface Warfare Center Division Crane, IN is responsible for performing COPE on various energetic components.

- c. The Naval Undersea Warfare Center Division, Keyport, WA is a participating activity responsible to Naval Surface Warfare Center Division Crane, IN for performing COPE for bombs and aircraft bomb system components.

- d. The Naval Surface Warfare Center Division Indian Head, MD is a participating activity responsible to Naval Surface Warfare Center Crane, IN for performing COPE on aircraft rockets and rocket system components.

2.1.15 Ordnance and Ammunition Logistics. A significant portion of ordnance and ammunition is not unique to U.S. Navy and Marine Corps but is common to all three services (Army, Air Force, Navy). For these items, the Department of Defense has established the Army as single site manager. The single site manager is responsible for the acquisition of common ordnance and ammunition items for all three services. The single site manager for ordnance and ammunition is the U.S. Army Armament, Munitions, and Chemical Command located in Rock Island, IL. Most 2E cognizance ammunition is provided by armament munitions and chemical commands which are government-managed and-operated manufacturing facilities. After manufacture, the ammunition is usually shipped to armament munitions and chemical commands managed inland storage depots where it is stored.

2.1.16 Conventional Ammunition Integrated Management System. The location and movement of ordnance and ammunition items is tracked through the Conventional Ammunition Integrated Management System (CAIMS). The NAVAMMOLOGCEN maintains the CAIMS ammunition stock status file. The CAIMS ammunition stock status file is updated by ammunition transaction reports which are submitted daily by all activities holding ordnance and ammunition. Any changes in inventory caused by receipts, transfers, or expenditure as well as any status changes within their 2E cognizance inventory must be reported. CAIMS is discussed further in volume I, section 5 of this instruction.

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CHAPTER 2.2

Organizational Level Maintenance

2.2.1 General. This chapter discusses the maintenance actions assigned to the organizational level which are performed in support of the day-to-day operation of the unit. Organizational level maintenance is performed by squadron aviation ordnance technicians assigned to aircraft squadron maintenance departments. Volume I chapter 2.3 of this manual describes the objectives and structure of these activities. Organizational level maintenance directly supports and maintains the aircraft weapons system, which consists of the aircraft, the airborne ordnance and ammunition, and the associated interface items.

2.2.2 Organizational Level Maintenance Responsibilities. Organizational level maintenance actions are tailored within the constraints of the organizational level's manpower and maintenance capabilities to ensure that the airborne ordnance and ammunition will perform its assigned end mission. The assigned maintenance actions are described generally in paragraphs 2.2.2.1 through 2.2.2.14. All maintenance actions are to be performed in accordance with the approved Naval Air Systems Command technical manuals. Strict adherence to the procedures contained in the applicable airborne weapons and stores loading manuals is mandatory for all weapons loading and downloading evolutions. Figures 2-2-1 through 2-2-16 depict in matrix format the responsibilities of aircraft squadron maintenance departments for 2E cognizance weapons and ordnance items.

2.2.2.1 Storage. Organizational level maintenance activities based ashore are provided ready service magazines to support daily operations. Ready service magazines are those designated spaces which are conveniently located near the area to be served. Squadron ordnance personnel use ready service magazines to store ordnance items such as Cartridge Actuated Devices (CADs), Propellant Actuated Devices (PADs), aircraft gun ammunition, and practice bomb signals, pyrotechnic devices, decoy flares, and signals, underwater sound. Ready service magazines are authorized temporary storage areas for loaded rocket launchers and flare dispensers at bases where quantity distance requirements are met and local policies permit. At naval air stations or Marine Corps air stations, weapons departments generally subcustody ready service magazines to squadrons. Squad-

ron personnel are responsible for the security, cleanliness, and proper storage of ordnance items in the magazines. Aboard ship, ready service magazines remain under the cognizance of the weapons department. All magazines utilized to store ordnance and ammunition must comply with the requirements of NAVSEA OP 4 (Ammunition Afloat) and NAVSEA OP 5 and NAVSEA 020-AC-SAF-010 (Ammunition Ashore).

2.2.2.2 Assembly. Organizational maintenance personnel receive weapons from the supporting intermediate level activity either as an all-up-round, which requires no further assembly, or as a partially assembled round. Organizational level aviation ordnance personnel will complete the assembly of this ordnance by installing fuzes, sensing elements, target detecting devices, and arming wires on MK 80 low drag general purpose bombs; fuzes and igniters on fire bombs; spotting signals in practice bombs; and igniters on jet assisted takeoff rocket motors. Organizational level aviation ordnance personnel may be required to belt aircraft gun ammunition when deployed for training or at forward bases. Refer to the applicable weapons and stores loading manual for specific instructions.

2.2.2.3 Aircraft Preparation and Inspection. Prior to any loading evolution, the aircraft must be prepared and inspected in accordance with the procedures issued in the applicable airborne weapons and stores loading manual for each aircraft. Aircraft preparation and inspection is a step-by-step procedure which must be performed to complete a safe and reliable load. During preparation and inspection, organizational level aviation ordnance personnel ensure that the aircraft is properly positioned and grounded, impulse cartridges are removed from all stores stations, and armament switches are in the off, safe, or normal positions. Bomb racks will be inspected for proper configuration, sway braces and ejector units adjusted to accommodate the stores to be loaded, and any accessory suspension equipment configured for loading. After the aircraft preparation and inspection procedures have been completed, the squadron ordnance supervisor will report the status of the aircraft to the proper authority. Any noted discrepancies must be corrected before the loading evolution can proceed.

	2.2.2.1 Storage	2.2.2.2 Assembly	2.2.2.3 Aircraft Prepara- tion and Inspection	2.2.2.4 Release and Control System Checks	2.2.2.5 Weapon Receipt and Inspection	2.2.2.6 Preven- tive Maintenance	2.2.2.7 Weapon Loading
General Purpose Bombs							
MK 82 or BLU-111A/B		X ₁	X	X	X		X
MK 83 or BLU-110A/B		X _{1,3}	X	X	X		X
MK 84		X _{1,3}	X	X	X		X
BLU-109A/B		X _{2,3}	X	X	X		X
Note 1. Organizational level maintenance assembly consists of a fuze and target detecting device . 2. Organizational level maintenance installs arming lanyard/cables . 3. JDAM assembly is accomplished exclusivity at the I Level							

Figure 2-2-1. Organizational Level Maintenance Responsibilities for General Purpose Bombs

	2.2.2.8 Monitor Service Life	2.2.2.9 Arming	2.2.2.10 Postflight Inspection	2.2.2.11 Dearming	2.2.2.12 Weapon Down- loading	2.2.2.13 Discrep- ancy Re- ports	2.2.2.14 Technical Directives
General Purpose Bombs							
MK 82 or BLU-110A/B	X	X ₁	X	X	X	X	X
MK 83 or BLU-111A/B	X	X ₁	X	X	X	X	X
MK 84	X	X	X	X	X	X	X
BLU-109A/B		X ₁	X	X	X		X
Note 1. Organizational level maintenance assembly consists of a fuze and target detecting device . 2. Organizational level maintenance installs arming lanyard/cables . 3. JDAM assembly is accomplished exclusivity at the I Level							

Figure 2-2-1. Organizational Level Maintenance Responsibilities for General Purpose Bombs (Cont'd)

	2.2.2.1 Storage	2.2.2.2 Assembly	2.2.2.3 Aircraft Prepara- tion and Inspection	2.2.2.4 Release and Control System Checks	2.2.2.5 Weapon Receipt and Inspection	2.2.2.6 Preven- tive Maintenance	2.2.2.7 Weapon Loading
Cluster Bomb Units							
CBU-20 Mods 3,6,11,12			X	X	X		X
CBU-78B CBU-78A/B CBU-78B/B CBU-78C/B CBU-78(T-1)B, A/B, B/B CBU-78(D-1)B, A/B, B/B			X	X	X		X
CBU-99B CBU-99(T-1)B CBU-99A/B CBU-99B/B CBU-99(T-1)B/B CBU-99(D-1)B/B			X	X	X		X
CBU-100B CBU-100(T-1)B CBU-100A/B CBU-100(T-1)B/B CBU-100(D-1)B/B			X	X	X		X

Figure 2-2-2. Organizational Level Maintenance Responsibilities for Cluster Bombs

	2.2.2.8 Monitor Service Life	2.2.2.9 Arming	2.2.2.10 Postflight Inspection	2.2.2.11 Dearming	2.2.2.12 Weapon Down- loading	2.2.2.13 Discrep- ancy Re- ports	2.2.2.14 Technical Directives
Cluster Bomb Units							
CBU-20 Mods 3,6,11,12		X	X	X	X	X	X
CBU-78B CBU-78A/B CBU-78B/B CBU-78C/B CBU-78(T-1)B, A/B, B/B CBU-78(D-1)B, A/B, B/B		X	X	X	X	X	X
CBU-99B CBU-99(T-1)B CBU-99A/B CBU-99B/B CBU-99(T-1)B/B CBU-99(D-1)B/B		X	X	X	X	X	X
CBU-100B CBU-100(T-1)B CBU-100A/B CBU-100(T-1)B/B CBU-100(D-1)B/B		X	X	X	X	X	X

Figure 2-2-2. Organizational Level Maintenance Responsibilities for Cluster Bombs (Cont'd)

	2.2.2.1 Storage	2.2.2.2 Assembly	2.2.2.3 Aircraft Prepara- tion and Inspection	2.2.2.4 Release and Control System Checks	2.2.2.5 Weapon Receipt and Inspection	2.2.2.6 Preven- tive Maintenance	2.2.2.7 Weapon Loading
Fire Bombs							
MK 77		X ₁	X	X	X		X
Note 1. Organizational level maintenance assembly is limited to fuzes and arming wires.							

Figure 2-2-3. Organizational Level Maintenance Responsibilities for Fire Bombs

	2.2.2.8 Monitor Service Life	2.2.2.9 Arming	2.2.2.10 Postflight Inspection	2.2.2.11 Dearming	2.2.2.12 Weapon Down- loading	2.2.2.13 Discrep- ancy Re- ports	2.2.2.14 Technical Directives
Fire Bombs							
MK 77		X	X	X	X	X	X
Note 1. Organizational level maintenance assembly is limited to fuzes and arming wires.							

Figure 2-2-3. Organizational Level Maintenance Responsibilities for Fire Bombs (Cont'd)

	2.2.2.1 Storage	2.2.2.2 Assembly	2.2.2.3 Aircraft Prepara- tion and Inspection	2.2.2.4 Release and Control System Checks	2.2.2.5 Weapon Receipt and Inspection	2.2.2.6 Preven- tive Main- tenance	2.2.2.7 Weapon Loading
Guided Bomb Units							
GBU-10			X	X	X		X
GBU-12			X	X	X		X
GBU-16			X	X	X		X
GBU-24			X	X	X		X
GBU-31			X	X	X		X
GBU-32			X	X	X		X
GBU-35			X	X	X		X

Figure 2-2-4. Organizational Level Maintenance Responsibilities for Guided Bomb Units

	2.2.2.8 Monitor Service Life	2.2.2.9 Arming	2.2.2.10 Postflight Inspection	2.2.2.11 Dearming	2.2.2.12 Weapon Down- loading	2.2.2.13 Discrep- ancy Re- ports	2.2.2.14 Technical Directives
Guided Bomb Units							
GBU-10	X	X	X	X	X	X	X
GBU-12	X	X	X	X	X	X	X
GBU-16	X	X	X	X	X	X	X
GBU-24	X	X	X	X	X	X	X
GBU-31	X	X	X	X	X	X	X
GBU-32	X	X	X	X	X	X	X
GBU-35	X	X	X	X	X	X	X

Figure 2-2-4. Organizational Level Maintenance Responsibilities for Guided Bomb Units (Cont'd)

	2.2.2.1 Storage	2.2.2.2 Assembly	2.2.2.3 Aircraft Prepara- tion and Inspection	2.2.2.4 Release and Control System Checks	2.2.2.5 Weapon Receipt and Inspection	2.2.2.6 Preven- tive Maintenance	2.2.2.7 Weapon Loading
Practice Bombs							
MK 76	X	X ₁	X	X	X		X
MK 106	X	X ₁	X	X	X		X
BDU-33D/B	X	X ₁	X	X	X		X
BDU-45/B	X	X ₁	X	X	X		X
BDU-48/B	X	X ₁	X	X	X		X
LGTR/LGTR II			X	X	X		X
Note 1. Usually limited to installation of spotting charges but may include fuzes and fins.							

Figure 2-2-5. Organizational Level Maintenance Responsibilities for Practice Bombs

	2.2.2.8 Monitor Service Life	2.2.2.9 Arming	2.2.2.10 Postflight Inspection	2.2.2.11 Dearming	2.2.2.12 Weapon Down- loading	2.2.2.13 Discrepancy Re- ports	2.2.2.14 Technical Directives
Practice Bombs							
MK 76		X	X	X	X	X	X
MK 106	X	X ₁	X	X	X		X
BDU-33D/B	X	X ₁	X	X	X		X
BDU-45/B	X	X ₁	X	X	X		X
BDU-48/B	X	X ₁	X	X	X		X
LGTR/LGTR II	X	X	X	X	X	X	X

**Figure 2-2-5. Organizational Level Maintenance Responsibilities for Practice Bombs
(Cont'd)**

	2.2.2.1 Storage	2.2.2.2 Assembly	2.2.2.3 Aircraft Prepara- tion and Inspection	2.2.2.4 Release and Control System Checks	2.2.2.5 Weapon Receipt and Inspection	2.2.2.6 Preven- tive Maintenance	2.2.2.7 Weapon Loading
Bomb Fuzes							
DSU-33B/B			X		X		X
FMU-139B (Series)			X	X	X		X ₁
FMU-140B (Series)			X	X	X		X ₁
FMU-143E/B			X	X	X		X ₁
FMU-152 (Series)			X		X		X ₁
FMU-339 (Series)			X	X	X		X ₁
MK 376 (Series)			X	X	X		X ₁
M904 (Series)		X ₃	X	X	X		X
MK 43 TDD			X	X	X		X
Notes 1. Loaded and downloaded as integral part of weapon. 2. Installation of arming assembly only. 3. Installation of delay element only.							

Figure 2-2-6. Organizational Level Maintenance Responsibilities for Bomb Fuzes

	2.2.2.8 Monitor Service Life	2.2.2.9 Arming	2.2.2.10 Postflight Inspection	2.2.2.11 Dearming	2.2.2.12 Weapon Down- loading	2.2.2.13 Discrep- ancy Re- ports	2.2.2.14 Technical Directives
Bomb Fuzes							
DSU-33B/B	X	X					X
FMU-139B (Series)	X	X	X	X	X ₁	X	X
FMU-140B (Series)	X	X	X	X	X ₁	X	X
FMU-143E/B	X	X	X	X	X ₁	X	X
FMU-152 (Series)	X	X					X
FMU-339 (Series)	X	X	X	X	X ₁	X	X
MK 376 (Series)	X	X	X	X	X ₁	X	X
M904 (Series)	X	X	X	X	X	X	X
MK 43 TDD	X	X	X	X	X	X	X
Note 1. Loaded and downloaded as integral part of weapon.							

Figure 2-2-6. Organizational Level Maintenance Responsibilities for Bomb Fuzes (Cont'd)

	2.2.2.1 Storage	2.2.2.2 Assembly	2.2.2.3 Aircraft Prepara- tion and Inspection	2.2.2.4 Release and Control System Checks	2.2.2.5 Weapon Receipt and Inspection	2.2.2.6 Preven- tive Maintenance	2.2.2.7 Weapon Loading
Aircraft Gun Ammunition							
M50 Series 20-MM AMMO			X	X	X		X
MK 100 Series 20-MM AMMO		X ₁	X	X	X		X
PGU Series 25-MM AMMO		X ₁	X	X	X		X
.50 Caliber AMMO			X	X	X		X
7.62-MM NATO AMMO			X	X	X		X
Note 1. Limited to linking of ammunition.							

Figure 2-2-7. Organizational Level Maintenance Responsibilities for Aircraft Gun Ammunition

	2.2.2.8 Monitor Service Life	2.2.2.9 Arming	2.2.2.10 Postflight Inspection	2.2.2.11 Dearming	2.2.2.12 Weapon Down- loading	2.2.2.13 Discrepancy Reports	2.2.2.14 Technical Directives
Aircraft Gun Ammunition							
M50 Series 20-MM AMMO		X	X	X	X	X	X
MK 100 Series 20-MM AMMO		X	X	X	X	X	X
PGU Series 25-MM AMMO		X	X	X	X	X	X
.50 Caliber AMMO		X	X	X	X	X	X
7.62-MM NATO AMMO		X	X	X	X	X	X

Figure 2-2-7. Organizational Level Maintenance Responsibilities for Aircraft Gun Ammunition (Cont'd)

	2.2.2.1 Storage	2.2.2.2 Assembly	2.2.2.3 Aircraft Prepara- tion and Inspection	2.2.2.4 Release and Control System Checks	2.2.2.5 Weapon Receipt and Inspection	2.2.2.6 Preven- tive Maintenance	2.2.2.7 Weapon Loading
Misc. Cartridges							
MK 1 Impulse Cartridge	X		X	X	X		X
MK 2 Impulse Cartridge	X		X	X	X		X
MK 4 Impulse Cartridge	X		X	X	X		X
MK 8 Impulse Cartridge	X		X	X	X		X
MK 9 Impulse Cartridge	X		X	X	X		X
MK 19 Impulse Cartridge	X		X	X	X		X
MK 51 Impulse Cartridge	X		X	X	X		X
MK 124 Impulse Cartridge	X		X	X	X		X
MK 125 Impulse Cartridge	X		X	X	X		X
MK 67 Impulse Cartridge	X		X	X	X		X
MK 131 Impulse Cartridge	X		X	X	X		X
MK 23 Impulse Cartridge	X		X	X	X		X

Figure 2-2-8. Organizational Level Maintenance Responsibilities for Cartridges

	2.2.2.8 Monitor Service Life	2.2.2.9 Arming	2.2.2.10 Postflight Inspection	2.2.2.11 Dearming	2.2.2.12 Weapon Down- loading	2.2.2.13 Discrep- ancy Re- ports	2.2.2.14 Technical Directives
Misc. Cartridges							
MK 1 Impulse Cartridge	X	X	X	X	X	X	X
MK 2 Impulse Cartridge	X	X	X	X	X	X	X
MK 4 Impulse Cartridge	X	X	X	X	X	X	X
MK 8 Impulse Cartridge	X	X	X	X	X	X	X
MK 9 Impulse Cartridge	X	X	X	X	X	X	X
MK 19 Impulse Cartridge	X	X	X	X	X	X	X
MK 51 Impulse Cartridge	X	X	X	X	X	X	X
MK 124 Impulse Cartridge	X	X	X	X	X	X	X
MK 125 Impulse Cartridge	X	X	X	X	X	X	X
MK 67 Impulse Cartridge	X	X	X	X	X	X	X
MK 131 Impulse Cartridge	X	X	X	X	X	X	X
MK 23 Impulse Cartridge	X	X	X	X	X	X	X

Figure 2-2-8. Organizational Level Maintenance Responsibilities for Cartridges (Cont'd)

	2.2.2.1 Storage	2.2.2.2 Assembly	2.2.2.3 Aircraft Prepara- tion and Inspection	2.2.2.4 Release and Control System Checks	2.2.2.5 Weapon Receipt and Inspection	2.2.2.6 Preven- tive Maintenance	2.2.2.7 Weapon Loading
Rockets and JATO/RATO							
LAU-10 Launcher	X		X	X	X		X
LAU-61 Launcher	X		X	X	X		X
LAU-68 Launcher	X		X	X	X		X
2.75" FFAR			X	X	X		X ₁
5.00" FFAR			X	X	X		X ₁
JATO/RATO		X ₃	X	X	X	X ₂	X
Notes 1. Loaded and downloaded while installed in launcher only; launcher loading of rockets may be required at forward base. 2. Organizational maintenance is limited to touchup painting of the rocket motor exterior and touchup of identification marking on the rocket motor and igniter. If any defect other than touchup of paint or identification marking is found, dispose of rocket motor or igniter in accordance with NAVAIR 11-85M-2. 3. Some assembly required during loading procedures.							

Figure 2-2-9. Organizational Level Maintenance Responsibilities for Rockets, Launchers, and JATO/RATO

	2.2.2.8 Monitor Service Life	2.2.2.9 Arming	2.2.2.10 Postflight Inspection	2.2.2.11 Dearming	2.2.2.12 Weapon Down- loading	2.2.2.13 Discrepancy Re- ports	2.2.2.14 Technical Directives
Rockets and JATO/RATO							
LAU-10 Launcher		X	X	X	X	X	X
LAU-61 Launcher		X	X	X	X	X	X
LAU-68 Launcher		X	X	X	X	X	X
2.75" FFAR		X	X	X	X ₁	X	X
5.00" FFAR		X	X	X	X ₁	X	X
JATO/RATO		X	X	X	X	X	X
Note 1. Loaded and downloaded while installed in launcher only; launcher loading of rockets may be required at forward base.							

Figure 2-2-9. Organizational Level Maintenance Responsibilities for Rockets, Launchers, and JATO/RATO (Cont'd)

	2.2.2.1 Storage	2.2.2.2 Assembly	2.2.2.3 Aircraft Prepara- tion and Inspection	2.2.2.4 Release and Control System Checks	2.2.2.5 Weapon Receipt and Inspection	2.2.2.6 Preven- tive Maintenance	2.2.2.7 Weapon Loading
Rocket Fuzes							
M414A1/ MK 93		X ₁	X	X	X		X ₂
M423		X ₁	X	X	X		X ₂
MK 352		X ₁	X	X	X		X ₂
Model 113A		X ₁	X	X	X		X ₂
Notes 1. Loaded and downloaded as integral part of weapon. Rocket buildup may be required at forward base. 2. Loaded and downloaded installed in launchers only.							

Figure 2-2-10. Organizational Level Maintenance Responsibilities for Rocket Fuzes

	2.2.2.8 Monitor Service Life	2.2.2.9 Arming	2.2.2.10 Postflight Inspection	2.2.2.11 Dearming	2.2.2.12 Weapon Down- loading	2.2.2.13 Discrep- ancy Re- ports	2.2.2.14 Technical Directives
Rocket Fuzes							
M414A1/ MK 93		X	X	X	X ₂	X	X
M423		X	X	X	X ₂	X	X
MK 352		X	X	X	X ₂	X	X
Model 113A		X	X	X	X ₂	X	X
Note 2. Loaded and downloaded installed in launchers only.							

Figure 2-2-10. Organizational Level Maintenance Responsibilities for Rocket Fuzes (Cont'd)

	2.2.2.1 Storage	2.2.2.2 Assembly	2.2.2.3 Aircraft Prepara- tion and Inspection	2.2.2.4 Release and Control System Checks	2.2.2.5 Weapon Receipt and Inspection	2.2.2.6 Preventive Maintenance	2.2.2.7 Weapon Loading
Rocket Warheads							
MK 1 MOD 5	X	X ₁	X	X	X		X ₂
MK 5 MOD 0	X	X ₁	X	X	X		X ₂
M156	X	X ₁	X	X	X		X ₂
MK 33	X	X ₁	X	X	X		X ₂
WDU-4/A	X	X ₁	X	X	X		X ₂
MK 6 MOD 7	X	X ₁	X	X	X		X ₂
Notes 1. Loaded and downloaded as integral part of weapon. Rocket buildup may be required at forward base. 2. Loaded and downloaded installed in launchers only.							

Figure 2-2-11. Organizational Level Maintenance Responsibilities for Rocket Warheads

	2.2.2.8 Monitor Service Life	2.2.2.9 Arming	2.2.2.10 Postflight Inspection	2.2.2.11 Dearming	2.2.2.12 Weapon Down- loading	2.2.2.13 Discrepancy Reports	2.2.2.14 Technical Directives
Rocket Warheads							
MK 1 MOD 5		X	X	X	X ₂	X	X
MK 5 MOD 0		X	X	X	X ₂	X	X
M156		X	X	X	X ₂	X	X
MK 33		X	X	X	X ₂	X	X
WDU-4/A		X	X	X	X ₂	X	X
MK 6 MOD 7		X	X	X	X ₂	X	X
Note 2. Loaded and downloaded installed in launchers only.							

Figure 2-2-11. Organizational Level Maintenance Responsibilities for Rocket Warheads (Cont'd)

	2.2.2.1 Storage	2.2.2.2 Assembly	2.2.2.3 Aircraft Prepara- tion and Inspection	2.2.2.4 Release and Control System Checks	2.2.2.5 Weapon Receipt and Inspection	2.2.2.6 Preven- tive Maintenance	2.2.2.7 Weapon Loading
Propellant Actuate Devices							
Impulse Cartridge MK 14	X					X	
Catapult Ejection Seat Cartridge MK 103	X					X	
MDC Detonator Cord Systems	X					X	
Seat Rocket Motor MK 76	X					X	

Figure 2-2-12. Organizational Level Maintenance Responsibilities for PADs

	2.2.2.8 Monitor Service Life	2.2.2.9 Arming	2.2.2.10 Postflight Inspection	2.2.2.11 Dearming	2.2.2.12 Weapon Down- loading	2.2.2.13 Discrep- ancy Re- ports	2.2.2.14 Technical Directives
Propellant Actuate Devices							
Impulse Cartridge MK 14	X					X	X
Catapult Ejection Seat Cartridge MK 103	X					X	X
MDC Detonator Cord Systems	X					X	X
Seat Rocket Motor MK 76	X					X	X

**Figure 2-2-12. Organizational Level Maintenance Responsibilities for PAD
(Cont'd)**

	2.2.2.1 Storage	2.2.2.2 Assembly	2.2.2.3 Aircraft Prepara- tion and Inspection	2.2.2.4 Release and Control System Checks	2.2.2.5 Weapon Receipt and Inspection	2.2.2.6 Preven- tive Main- tenance	2.2.2.7 Weapon Loading
Pyrotechnics							
MK 45 Paraflare	X		X	X	X		X ₁
LUU-2 Paraflare	X		X	X	X		X ₁
MK 25 MLM	X		X	X	X		X
MK 58 MLM	X		X	X	X		X
Note 1. Loaded and downloaded installed in dispensers only.							

Figure 2-2-13. Organizational Level Maintenance Responsibilities for Pyrotechnics

	2.2.2.8 Monitor Service Life	2.2.2.9 Arming	2.2.2.10 Postflight Inspection	2.2.2.11 Dearming	2.2.2.12 Weapon Down- loading	2.2.2.13 Discrep- ancy Re- ports	2.2.2.14 Technical Directives
Pyrotechnics							
MK 45 Paraflare	X	X	X	X	X ₁	X	X
LUU-2 Paraflare	X	X	X	X	X ₁	X	X
MK 25 MLM	X	X	X	X	X	X	X
MK 58 MLM	X	X	X	X	X	X	X
Note 1. Loaded and downloaded installed in dispensers only.							

Figure 2-2-13. Organizational Level Maintenance Responsibilities for Pyrotechnics (Cont'd)

	2.2.2.1 Storage	2.2.2.2 Assembly	2.2.2.3 Aircraft Prepara- tion and Inspection	2.2.2.4 Release and Control System Checks	2.2.2.5 Weapon Receipt and Inspection	2.2.2.6 Preven- tive Maintenance	2.2.2.7 Weapon Loading
Dispensers							
MJU-5/B	X		X	X	X		X ₁
SUU-25	X		X	X	X		X ₁
SUU-44	X		X	X	X		X ₁
Note 1. Loaded and downloaded installed in dispensers only.							

Figure 2-2-14. Organizational Level Maintenance Responsibilities for Dispensers

	2.2.2.8 Monitor Service Life	2.2.2.9 Arming	2.2.2.10 Postflight Inspection	2.2.2.11 Dearming	2.2.2.12 Weapon Down- loading	2.2.2.13 Discrepancy Re- ports	2.2.2.14 Technical Directives
Dispensers							
MJU-5/B	X	X	X	X	X ₁	X	X
SUU-25	X	X	X	X	X ₁	X	X
SUU-44	X	X	X	X	X ₁	X	X
Note 1. Loaded and downloaded installed in dispensers only.							

Figure 2-2-14. Organizational Level Maintenance Responsibilities for Dispensers (Cont'd)

	2.2.2.1 Storage	2.2.2.2 Assembly	2.2.2.3 Aircraft Prepara- tion and Inspection	2.2.2.4 Release and Control System Checks	2.2.2.5 Weapon Receipt and Inspection	2.2.2.6 Preven- tive Maintenance	2.2.2.7 Weapon Loading
Airborne Electronic Warfare Expendable Countermeasures							
Decoy Flares	X		X	X	X		X
Decoy RT-1489/ALE (GEN-X)	X		X	X	X		X
Chaff RR Series	X		X	X	X		X

Figure 2-2-15. Organizational Level Maintenance Responsibilities for Countermeasures

	2.2.2.8 Monitor Service Life	2.2.2.9 Arming	2.2.2.10 Postflight Inspection	2.2.2.11 Dearming	2.2.2.12 Weapon Down- loading	2.2.2.13 Discrep- ancy Re- ports	2.2.2.14 Technical Directives
Airborne Electronic Warfare Expendable Countermeasures							
Decoy Flares	X	X	X	X	X	X	X
Decoy RT-1489/ALE (GEN-X)	X	X	X	X	X	X	X
Chaff RR Series	X	X	X	X	X	X	X

Figure 2-2-15. Organizational Level Maintenance Responsibilities for Countermeasures (Cont'd)

	2.2.2.1 Storage	2.2.2.2 Assembly	2.2.2.3 Aircraft Prepara- tion and Inspection	2.2.2.4 Release and Control System Checks	2.2.2.5 Weapon Receipt and Inspection	2.2.2.6 Preven- tive Maintenance	2.2.2.7 Weapon Loading
Signals, Underwater Sound							
SUS		X	X	X	X		X

Figure 2-2-16. Organizational Level Maintenance Responsibilities for Signals, Underwater Sound

	2.2.2.8 Monitor Service Life	2.2.2.9 Arming	2.2.2.10 Postflight Inspection	2.2.2.11 Dearming	2.2.2.12 Weapon Down- loading	2.2.2.13 Discrep- ancy Re- ports	4.2.2.14 Technical Directives
Signals, Underwater Sound							
SUS		X	X	X	X	X	X

Figure 2-2-16. Organizational Level Maintenance Responsibilities for Signals, Underwater Sound (Cont'd)

2.2.2.4 Release and Control System Checks. Release and control system checks must be performed in accordance with the applicable airborne weapons and stores loading manual for each aircraft.

2.2.2.5 Weapon Receipt and Inspection. Prior to accepting a weapon or ordnance item from the supporting intermediate maintenance level activity, organizational level aviation ordnance personnel will inspect each weapon or item of ordnance received for proper integrity, dents, cracks, proper mating, and security of assembly. Wings and fins must be inspected for dents, cracks, distortions, corrosion, and proper component operation. Weapons with safe and arm mechanisms will be inspected to assure that the mechanism is in the proper position. All-up-round weapons such as cluster bomb units will be inspected for proper fuze settings and fin security. Weapons received loaded in launchers or dispensers will be inspected, and the launcher or dispenser will be inspected for proper safety pin or safety device installation. Ordnance items that are delivered to the squadron in sealed containers, such as CADs, PAD, and signals, underwater sound, will be examined at the first opportunity after the containers are opened. Weapons or items of ordnance which do not meet inspection criteria should be rejected and the proper authority notified.

2.2.2.6 Preventive Maintenance. At the organizational maintenance level, visual inspections are conducted to verify integrity, serviceability, and condition of installed PAD during scheduled aircraft maintenance inspections. Using applicable maintenance instruction manuals, organizational aviation ordnance personnel inspect and replace PAD components that have reached a specified replacement time or event interval. Any device displaying evidence of rough handling, damage, or major corrosion shall be replaced. Any maintenance requiring the use of hazardous/consumable materials shall be performed in accordance with NAVAIR 01-1A-75 (Airborne Weapons and Associated Equipment, Consumable Material Applications and Hazardous Material Authorized Use List) (NOTAL). See volume I, section 4 for further details.

2.2.2.7 Weapon Loading. During weapon loading, organizational level aviation ordnance personnel install airborne weapons and stores on or into an aircraft. Loading evolutions are performed within a designated loading and rearming area in accordance with the authorized weapons and stores loading checklist. Refer to the applicable airborne weapons and stores loading manual for specific loading procedural requirements. The loading manual also lists authorized loading equipment for handling and loading of weapons and stores.

2.2.2.8 Monitor Service Life. This is the period of time a CAD, Cartridge, or PAD can be used with an ensured high degree of reliability. Performance of CADs, Cartridges, or PAD is influenced by the environment to which they are exposed. These limits are defined as shelf life and installed life.

2.2.2.8.1 Shelf Life. Shelf life is the period of time, beginning from the date of manufacture, a CAD, Cartridge, or PAD can remain in its hermetically sealed container and still be serviceable. Any CAD, Cartridge, or PAD will be inspected prior to installation to ensure that the prescribed shelf life has not been exceeded. Cads, Cartridges, or PAD shall be removed from inventory upon expiration of shelf life.

2.2.2.8.2 Installed Life. Installed life is the period of time a CAD, Cartridge, or PAD is allowed to be used after its hermetically sealed container is opened, however, the installed life expiration date shall never exceed the shelf life expiration date. Organizational level personnel will ensure that this information is entered into appropriate aircraft log-books.

2.2.2.9 Arming. Prior-to-launch arming procedures transform a weapon from a safe condition to the armed condition required for weapon functioning. Arming procedures will be performed by organizational level aviation ordnance personnel in authorized arming areas. During arming operations, personnel perform stray voltage tests, and arm forward firing aircraft gun systems. Procedures are issued by the applicable airborne weapons and stores loading manual for each aircraft.

2.2.2.10 Postflight Inspection. Postflight inspection of weapons and stores will be performed after landing or ground abort to determine the security and safety condition of the aircraft and stores. Organizational level aviation ordnance personnel will inspect weapons and stores for loose, damaged, or missing components and security and proper configuration of fuzes, arming wires, and safety devices. Procedures for postflight inspections are contained in the applicable airborne weapons and stores loading manual of each aircraft.

2.2.2.11 Dearming. Postflight weapon dearming procedures transform a weapon from the armed condition to a safe condition. Dearming procedures are performed prior to download and during turnaround evolutions. Organizational level aviation ordnance personnel will perform dearming procedures in an authorized dearming area in accordance with the applicable airborne weapons and stores loading manual for each aircraft.

2.2.2.12 Weapon Downloading. Weapon downloading procedures, as issued in the applicable airborne weapons and

stores loading manual for each aircraft, are mandatory to ensure safety of personnel and equipment and prevent damage to the weapons and stores. Organizational level aviation ordnance personnel will perform downloading in an authorized downloading and rearming area using authorized handling and downloading equipment. Aircraft gun ammunition shall be inspected upon downloading in accordance with applicable technical manuals. Disassembly, such as removal of fuzes, arming wires, signals, etc., is commonly included in weapons downloading procedures.

2.2.2.13 Discrepancy Reports. Discrepancy reports are initiated at the organizational level when a discrepancy is discovered during the performance of any of the assigned organizational level maintenance actions. Discrepancy reporting procedures are contained in volume I, chapter 4.6 of this instruction.

2.2.2.14 Technical Directives. Organizational level aviation ordnance personnel are responsible for assuring that notice of ammunition reclassifications and airborne weapons bulletins directed to that level are complied with.

2.2.3 Explosives Handling Personnel Qualification and Certification (Qual/Cert) Program. Organizational level aviation ordnance personnel involved with airborne ordnance and ammunition must be trained, qualified, and certified to perform these maintenance actions in accordance with the requirements of OPNAVINST 8020.14/MCO P8020.11 (NOTAL) or MCO 8023.3 (NOTAL) and applicable type commander instructions.

2.2.4 Maintenance Training Requirements. Maintenance training is a continuous and ongoing process, conducted to ensure that personnel who operate, maintain, and support weapons systems and associated equipments are qualified to perform their respective functions. Formal and on-the-job maintenance training, for airborne ordnance and ammunition processed at organizational level maintenance activities, may be augmented through the use of Engineering Technical Specialists/Fleet Weapons Support Team provided by the Naval Air Warfare Center, Weapons Division, Point Mugu, CA. Volume I, chapter 4.4 provides procedures for requesting field service training and technical assistance. Volume I, section 6 provides additional information on all aspects of Naval Airborne Weapons Maintenance Training.

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CHAPTER 2.3

Intermediate Level Maintenance

2.3.1 General. This chapter describes the maintenance actions assigned to intermediate maintenance activities. Intermediate level maintenance is authorized and designated to be performed by naval air stations, Marine Corps air stations, shipboard weapons departments, and marine aviation logistics squadrons. The following paragraphs discuss the maintenance functions performed at intermediate level activities.

2.3.2 Intermediate Level Maintenance Responsibilities. Intermediate level maintenance activities perform higher level maintenance actions on airborne ordnance and ammunition in support of the organizational level activity. The primary objective of intermediate level maintenance is to issue to the organizational level an item which requires minimal maintenance actions to be performed at that level, allowing expedient preparation and loading of the item. Figures 2-3-1 through 2-3-15 assign the intermediate maintenance actions that are performed on the airborne ordnance and ammunition listed in volume II, chapter 2.1 of this instruction. The assigned maintenance actions are described generally in paragraphs 2.3.2.1 through 2.3.2.11 of this volume. All maintenance actions are to be performed in accordance with the approved Naval Air Systems Command technical manuals which have been developed for each item or family of airborne ordnance and ammunition. The following is an explanation of the functions listed in the matrix.

2.3.2.1 Receiving Inspection. Receiving inspections are conducted by intermediate level maintenance personnel and include inspection of containers, cradles, palletized ammunition, and all fleet returned ammunition received by or inducted into an intermediate level activity. Containers and cradles are inspected for correct marking and for possible damage. Containers and cradles that are dented, crushed, punctured, or appear to have been tampered with are particularly suspect and must not be stored without examination of their contents. If the contents are damaged and that damage appears to be the result of damage to the container and cradle, the proper authority should be notified for appropriate deficiency reporting and disposition instructions. Receiving inspections shall be conducted in accordance with applicable directives.

2.3.2.2 Storage and Handling. All weapons, ordnance, and ordnance components will be stored by intermediate level maintenance personnel in accordance with NAVSEA OP 4, NAVSEA OP 5, NAVSEA OP 3565/NAVAIR 16-1-529, and NAVSEA OP 3347 (U.S. Navy Ordnance Safety Precautions). Intermediate level maintenance activities may store ammunition in primary or ready service storage depending on the configuration and immediate intended use of the ammunition. Marine Corps intermediate level activities have the capability and are authorized to erect and work from advanced base storage areas when forward deployed in accordance with NAVSEA OP 5, volume 3.

2.3.2.2.1 Primary Magazines. Primary magazines are designed to accommodate the ship or station's complete allowance of ammunition. They are generally located below the main deck and usually below the waterline within the armored envelope of the ship or in a remote section of an air station.

2.3.2.2.2 Ready Service Magazines. Ready service magazines are those designated spaces which are conveniently located near the area to be served. They are capable of stowing completely assembled weapons for ready access.

2.3.2.2.3 Accidents or incidents involving weapons or ammunition usually occur during handling, loading and downloading, or when transporting weapons. Handling operations require adherence to safety precautions to ensure personnel safety. All intermediate level aviation ordnance personnel involved in handling weapons will be thoroughly indoctrinated regarding their duties as prescribed by the technical manuals. Supervisors will ensure that technical manuals are adhered to. All handling, including lifting, lowering, storing, and transporting, will be performed utilizing authorized equipment. Any explosive item that is damaged or defective is considered hazardous and must be rejected. The weapon shall be isolated and explosive ordnance disposal personnel summoned to remove the item.

	2.3.2.1 Receiving Inspection	2.3.2.2 Storage and Handling	2.3.2.3 Packaging and Unpackaging	2.3.2.4 Cleaning	2.3.2.5 Paint Touch-up	2.3.2.6 Replacement of Specified Components
General Special Purpose Bombs						
MK 82 or BLU-111A/B	X	X	X	X	X	
MK 83 or BLU-110A/B	X	X	X	X	X	
MK 84	X	X	X	X	X	
BLU-109A/B	X	X	X	X	X	

**Figure 2-3-1. Intermediate Level Maintenance Responsibilities for
General/Special Purpose Bombs**

	2.3.2.7 Assembly and Disassembly	2.3.2.8 IRRS Mating	2.3.2.9 Ready Service In- spection	2.3.2.10 Technical Directives	2.3.2.11 Discrepancy Reporting
General Special Purpose Bombs					
MK 82 or BLU-111A/B	X	X	X	X	X
MK 83 or BLU-110A/B	X1	X	X	X	X
MK 84	X1	X	X	X	X
BLU-109A/B	X1	X	X	X	X

NOTE 1. JDAM Assembly and Disassembly exclusively at the Intermediate Level

**Figure 2-3-1. Intermediate Level Maintenance Responsibilities for
General/Special Purpose Bombs (Cont'd)**

	2.3.2.1 Receiving Inspection	2.3.2.2 Storage and Handling	2.3.2.3 Packaging and Unpackaging	2.3.2.4 Cleaning	2.3.2.5 Paint Touch-up	2.3.2.6 Replacement of Specified Components
Cluster Bomb Units						
CBU-M-20 Mods 3,6,9,11,12	X	X	X	X	X	X
CBU-78B CBU-78A/B CBU-78B/B CBU-78C/B CBU-78(T-1)B, A/B, B/B CBU-78(D-1)B, A/B, B/B	X	X	X	X	X	X
CBU-99/B CBU-99(T-1)B CBU-99A/B CBU-99B/B CBU-99(T-1)B/B CBU-99(D-1)B/B	X	X	X	X	X	X
CBU-100B CBU-100(T-1)B CBU-100(T-1)A/B CBU-100(T-1)B/B CBU-100(D-1)B/B	X	X	X	X	X	X

Figure 2-3-2. Intermediate Level Maintenance Responsibilities for Cluster Bombs

	2.3.2.7 Assembly and Disassembly	2.3.2.8 IRRS Mating	2.3.2.9 Ready Service In- spection	2.3.2.10 Technical Directives	2.3.2.11 Discrepancy Reporting
Cluster Bomb Units					
CBU-MK-20 Mods 3,6,9,11,12			X	X	X
CBU-78/B CBU-78A/B CBU-78B/B CBU-78C/B CBU-78(T-1)B, A/B, B/B CBU-78(D-1)B, A/B, B/B			X	X	X
CBU-99/B CBU-99(T-1)B CBU-99A/B CBU-99B/B CBU-99(T-1)B/B CBU-99(D-1)B/B			X	X	X
CBU-100B CBU-100(T-1)B CBU-100(T-1)A/B CBU-100(T-1)B/B CBU-100(D-1)B/B			X	X	X

**Figure 2-3-2. Intermediate Level Maintenance Responsibilities for Cluster Bombs
(Cont'd)**

	2.3.2.1 Receiving Inspection	2.3.2.2 Storage and Handling	2.3.2.3 Packaging and Unpackaging	2.3.2.4 Cleaning	2.3.2.5 Paint Touch-up	2.3.2.6 Replacement of Specified Components
Fire Bombs						
MK 77	X	X	X	X		

Figure 2-3-3. Intermediate Level Maintenance Responsibilities for Fire Bombs

	2.3.2.7 Assembly and Disassembly	2.3.2.8 IRRS Mating	2.3.2.9 Ready Service In- spection	2.3.2.10 Technical Directives	2.3.2.11 Discrepancy Reporting
Fire Bombs					
MK 77			X	X	X

Figure 2-3-3. Intermediate Level Maintenance Responsibilities for Fire Bombs (Cont'd)

	2.3.2.1 Receiving Inspection	2.3.2.2 Storage and Handling	2.3.2.3 Packaging and Unpackaging	2.3.2.4 Cleaning	2.3.2.5 Paint Touch-up	2.3.2.6 Replacement of Specified Components
Guided Bomb Units						
GBU-10	X	X	X	X	X	X
GBU-12	X	X	X	X	X	X
GBU-16	X	X	X	X	X	X
GBU-24	X	X	X	X	X	X
GBU-31	X	X	X	X	X	X
GBU-32	X	X	X	X	X	X
GBU-35	X	X	X	X	X	X

Figure 2-3-4. Intermediate Level Maintenance Responsibilities for Guided Bomb Units

	2.3.2.7 Assembly and Disassembly	2.3.2.8 IRRS Mating	2.3.2.9 Ready Service In- spection	2.3.2.10 Technical Directives <small>For JDAM (TCTO/TD)</small>	2.3.2.11 Discrepancy Reporting
Guided Bomb Units					
GBU-10	X		X	X	X
GBU-12	X		X	X	X
GBU-16	X		X	X	X
GBU-24	X		X	X	X
GBU-31	X		X	X	X
GBU-32	X		X	X	X
GBU-35	X		X	X	X

**Figure 2-3-4. Intermediate Level Maintenance Responsibilities for Guided Bomb Units
(Cont'd)**

	2.3.2.1 Receiving Inspection	2.3.2.2 Storage and Handling	2.3.2.3 Packaging and Unpackaging	2.3.2.4 Cleaning	2.3.2.5 Paint Touch-up	2.3.2.6 Replacement of Specified Components
Practice Bombs						
MK 76	X	X	X	X	X	
MK 106	X	X	X	X	X	
BDU-33D/B	X	X	X	X	X	
BDU-45/B	X	X	X	X	X	
BDU-48/B	X	X	X	X	X	
LGTR/LGTR II	X	X	X	X	X	

Figure 2-3-5. Intermediate Level Maintenance Responsibilities for Practice Bombs

	2.3.2.7 Assembly and Disassembly	2.3.2.8 IRRS Mating	2.3.2.9 Ready Service In- spection	2.3.2.10 Technical Directives	2.3.2.11 Discrepancy Reporting
Practice Bombs					
MK 76			X	X	X
MK 106			X	X	X
DBU-33D/B			X	X	X
BDU-45/B			X	X	X
BDU-48/B			X	X	X
LGTR/LGTR II			X	X	X

Figure 2-3-5. Intermediate Level Maintenance Responsibilities for Practice Bombs (Cont'd)

	2.3.2.1 Receiving Inspection	2.3.2.2 Storage and Handling	2.3.2.3 Packaging and Unpackaging	2.3.2.4 Cleaning	2.3.2.5 Paint Touch-up	2.3.2.6 Replacement of Specified Components
Bomb Fuzes						
DSU-33B/B	X		X			
FMU-139 (Series)	X	X	X			
FMU-140 (Series)	X	X	X			
FMU-143E/B	X	X	X			
FMU-152 (Series)	X		X			
MK 339 (Series)	X	X	X			
MK 376 (Series)	X	X	X			
M904 (Series)	X	X	X			
MK 43 TDD	X	X	X			

Figure 2-3-6. Intermediate Level Maintenance Responsibilities for Bomb Fuzes

	2.3.2.7 Assembly and Disassembly	2.3.2.8 IRRS Mating	2.3.2.9 Ready Service In- spection	2.3.2.10 Technical Directives	2.3.2.11 Discrepancy Reporting
Bomb Fuzes					
DSU-33B/B			X		X
FMU-139 (Series)			X	X	X
FMU-140 (Series)			X	X	X
FMU-143E/B			X	X	X
FMU-152 (Series)			X		X
MK 339 (Series)			X	X	X
MK 346 (Series)			X	X	X
MK 376 (Series)			X	X	X
M904 (Series)			X	X	X
MK 43 TDD			X	X	X

Figure 2-3-6. Intermediate Level Maintenance Responsibilities for Bomb Fuzes (Cont'd)

	2.3.2.1 Receiving Inspection	2.3.2.2 Storage and Handling	2.3.2.3 Packaging and Unpackaging	2.3.2.4 Cleaning	2.3.2.5 Paint Touch-up	2.3.2.6 Replacement of Specified Components
Aircraft Gun Ammunition						
M50 Series 20-MM AMMO	X	X	X			
MK 100 Series 20-MM AMMO	X	X	X			
PGU Series 25-MM AMMO	X	X	X			
.50 Caliber AMMO	X	X	X			
7.62-MM NATO AMMO	X	X	X			
PGU Series 20-MM AMMO	X	X	X			

**Figure 2-3-7. Intermediate Level Maintenance Responsibilities
for Aircraft Gun Ammunition**

	2.3.2.7 Assembly and Disassembly	2.3.2.8 IRRS Mating	2.3.2.9 Ready Service In- spection	2.3.2.10 Technical Di- rectives	2.3.2.11 Discrepancy Reporting
Aircraft Gun Ammunition					
M50 Series 20-MM AMMO	X _{1, 2}		X	X	X
MK 100 Series 20-MM AMMO	X _{1, 2}		X	X	X
PGU Series 25-MM AMMO	X _{1, 2}		X	X	X
.50 Caliber AMMO	X ₁		X	X	X
7.62-MM NATO AMMO	X ₁		X	X	X
PGU Series 20-MM AMMO	X ₁		X	X	X
Note 1. Linking and delinking ammunition. 2. Load and unload linkless ammunition carrier.					

**Figure 2-3-7. Intermediate Level Maintenance Responsibilities
for Aircraft Gun Ammunition (Cont'd)**

	2.3.2.1 Receiving Inspection	2.3.2.2 Storage and Handling	2.3.2.3 Packaging and Unpackaging	2.3.2.4 Cleaning	2.3.2.5 Paint Touch-up	2.3.2.6 Replacement of Specified Components
Misc. Cartridges and CADs						
MK 1 Impulse Cartridge	X	X	X			
MK 2 Impulse Cartridge	X	X	X			
MK 4 Impulse Cartridge	X	X	X			
MK 8 Impulse Cartridge	X	X	X			
MK 9 Impulse Cartridge	X	X	X			
MK 19 Impulse Cartridge	X	X	X			
MK 51 Impulse Cartridge	X	X	X			
MK 124 Impulse Cartridge	X	X	X			
MK 125 Impulse Cartridge	X	X	X			
MK 67 Impulse Cartridge	X	X	X			
MK 131 Impulse Cartridge	X	X	X			
MK 23 Impulse Cartridge	X	X	X			
MK 79 Signal	X	X	X			

Figure 2-3-8. Intermediate Level Maintenance Responsibilities for CADs

	2.3.2.7 Assembly and Disassembly	2.3.2.8 IRRS Mating	2.3.2.9 Ready Service In- spection	2.3.2.10 Technical Directives	2.3.2.11 Discrepancy Reporting
Misc. Cartridges and CADs					
MK 1 Impulse Cartridge			X	X	X
MK 2 Impulse Cartridge			X	X	X
MK 4 Impulse Cartridge			X	X	X
MK 8 Impulse Cartridge			X	X	X
MK 9 Impulse Cartridge			X	X	X
MK 19 Impulse Cartridge			X	X	X
MK 51 Impulse Cartridge			X	X	X
MK 124 Impulse Cartridge			X	X	X
MK 125 Impulse Cartridge			X	X	X
MK 67 Impulse Cartridge			X	X	X
MK 131 Impulse Cartridge			X	X	X
MK 23 Impulse Cartridge			X	X	X
MK 79 Signal			X	X	X

**Figure 2-3-8. Intermediate Level Maintenance Responsibilities for CADs
(Cont'd)**

	2.3.2.1 Receiving Inspection	2.3.2.2 Storage and Handling	2.3.2.3 Packaging and Unpackaging	2.3.2.4 Cleaning	2.3.2.5 Paint Touch-up	2.3.2.6 Replacement of Specified Components
Rockets and JATO/RATO						
LAU-10 Launcher	X	X	X	X	X	X
LAU-61 Launcher	X	X	X	X	X	X
LAU-68 Launcher	X	X	X	X	X	X
2.75" FFAR	X	X	X	X	X	
5.00" FFAR	X	X	X	X	X	
JATO/RATO	X	X	X	X	X	

Figure 2-3-9. Intermediate Level Maintenance Responsibilities for Rockets, Launchers, and JATO/RATO

	2.3.2.7 Assembly and Disassembly	2.3.2.8 IRRS Mating	2.3.2.9 Ready Service In- spection	2.3.2.10 Technical Directives	2.3.2.11 Discrepancy Reporting
Rockets and JATO/RATO					
LAU-10 Launcher	X		X	X	X
LAU-61 Launcher	X		X	X	X
LAU-68 Launcher	X		X	X	X
2.75" FFAR	X		X	X	X
5.00" FFAR	X		X	X	X
JATO/RATO			X	X	X

Figure 2-3-9. Intermediate Level Maintenance Responsibilities for Rockets, Launchers, and JATO/RATO (Cont'd)

	2.3.2.1 Receiving Inspection	2.3.2.2 Storage and Handling	2.3.2.3 Packaging and Unpackaging	2.3.2.4 Cleaning	2.3.2.5 Paint Touch-up	2.3.2.6 Replacement of Specified Components
Rocket Fuzes						
M414A1/ MK 93	X	X	X			
M423	X	X	X			
MK 352	X	X	X			
FMU-136/B	X	X	X			
Model 113A	X	X	X			

Figure 2-3-10. Intermediate Level Maintenance Responsibilities for Rocket Fuzes

	2.3.2.7 Assembly and Disassembly	2.3.2.8 IRRS Mating	2.3.2.9 Ready Service In- spection	2.3.2.10 Technical Directives	2.3.2.11 Discrepancy Reporting
Rocket Fuzes					
M414A1/ MK 93	X		X	X	X
M423	X		X	X	X
MK 352	X		X	X	X
FMU-136/B	X		X	X	X
Model 113A	X		X	X	X

Figure 2-3-10. Intermediate Level Maintenance Responsibilities for Rocket Fuzes (Cont'd)

	2.3.2.1 Receiving Inspection	2.3.2.2 Storage and Handling	2.3.2.3 Packaging and Unpackaging	2.3.2.4 Cleaning	2.3.2.5 Paint Touch-up	2.3.2.6 Replacement of Specified Components
Rocket Warheads						
MK 1 MOD 5	X	X	X			
MK 5 MOD 0	X	X	X			
M156	X	X	X			
MK 33	X	X	X			
WDU-4/A	X	X	X			
MK 6 MOD 7	X	X	X			

Figure 2-3-11. Intermediate Level Maintenance Responsibilities for Rocket Warheads

	2.3.2.7 Assembly and Disassembly	2.3.2.8 IRRS Mating	2.3.2.9 Ready Service In- spection	2.3.2.10 Technical Directives	2.3.2.11 Discrepancy Reporting
Rocket Warheads					
MK 1 MOD 5	X		X	X	X
MK 5 MOD 0	X		X	X	X
M156	X		X	X	X
MK 33	X		X	X	X
WDU-4/A	X		X	X	X
MK 6 MOD 7	X		X	X	X

Figure 2-3-11. Intermediate Level Maintenance Responsibilities for Rocket Warheads (Cont'd)

	2.3.2.1 Receiving Inspection	2.3.2.2 Storage and Handling	2.3.2.3 Packaging and Unpackaging	2.3.2.4 Cleaning	2.3.2.5 Paint Touch-up	2.3.2.6 Replacement of Specified Components
Propellant Actuated Devices						
Impulse Cartridge MK 14	X	X				
Catapult Ejection Seat Cartridge MK 103	X	X				
MDC Detonator Cord	X	X				
Rocket Motor MK 76	X	X				

**Figure 2-3-12. Intermediate Level Maintenance Responsibilities for
PADs**

	2.3.2.7 Assembly and Disassembly	2.3.2.8 IRRS Mating	2.3.2.9 Ready Service In- spection	2.3.2.10 Technical Di- rectives	2.3.2.11 Discrepancy Reporting
Propellant Actuated Devices					
Impulse Cartridge MK 14				X	X
Catapult Ejection Seat Cartridge MK 103				X	X
MDC Detonator Cord				X	X
Rocket Motor MK 76				X	X

**Figure 2-3-12. Intermediate Level Maintenance Responsibilities for
PADs (Cont'd)**

	2.3.2.1 Receiving Inspection	2.3.2.2 Storage and Handling	2.3.2.3 Packaging and Unpackaging	2.3.2.4 Cleaning	2.3.2.5 Paint Touch-up	2.3.2.6 Replacement of Specified Components
Pyrotechnics						
MK 45 Paraflare	X	X	X			
LUU-2 Paraflare	X	X	X			
MK 25 MLM	X	X	X			
MK 58 MLM	X	X	X			

Figure 2-3-13. Intermediate Level Maintenance Responsibilities for Pyrotechnics

	2.3.2.7 Assembly and Disassembly	2.3.2.8 IRRS Mating	2.3.2.9 Ready Service In- spection	2.3.2.10 Technical Directives	2.3.2.11 Discrepancy Reporting
Pyrotechnics					
MK 45 Paraflare	X		X	X	X
LUU-2 Paraflare	X		X	X	X
MK 25 MLM			X	X	X
MK 58 MLM			X	X	X

Figure 2-3-13. Intermediate Level Maintenance Responsibilities for Pyrotechnics (Cont'd)

	2.3.2.1 Receiving Inspection	2.3.2.2 Storage and Handling	2.3.2.3 Packaging and Unpackaging	2.3.2.4 Cleaning	2.3.2.5 Paint Touch-up	2.3.2.6 Replacement of Specified Components
Dispensers						
MJU-5/B	X					
SUU-25	X	X	X	X	X	X
SUU-44	X	X	X	X	X	X

Figure 2-3-14. Intermediate Level Maintenance Responsibilities for Dispensers

	2.3.2.7 Assembly and Disassembly	2.3.2.8 IRRS Mating	2.3.2.9 Ready Service In- spection	2.3.2.10 Technical Directives	2.3.2.11 Discrepancy Reporting
Dispensers					
MJU-5/B				X	X
SUU-25	X		X	X	X
SUU-44	X		X	X	X

Figure 2-3-14. Intermediate Level Maintenance Responsibilities for Dispensers (Cont'd)

	2.3.2.1 Receiving Inspection	2.3.2.2 Storage and Handling	2.3.2.3 Packaging and Unpackaging	2.3.2.4 Cleaning	2.3.2.5 Paint Touch-up	2.3.2.6 Replacement of Specified Components
Airborne Electronic Warfare Expendable Countermeasures						
Decoy Flares	X	X				
Decoy RT-1489/ ALE (GEN-X)	X	X				
Chaff RR Series	X	X				

Figure 2-3-15. Intermediate Level Maintenance Responsibilities for Countermeasures

	2.3.2.7 Assembly and Disassembly	2.3.2.8 IRRS Mating	2.3.2.9 Ready Service In- spection	2.3.2.10 Technical Directives	2.3.2.11 Discrepancy Reporting
Airborne Electronic Warfare Expendable Countermeasures					
Decoy Flares			X	X	X
Decoy RT-1489/ ALE (GEN-X)			X	X	X
Chaff RR Series			X	X	X

Figure 2-3-15. Intermediate Level Maintenance Responsibilities for Countermeasures (Cont'd)

2.3.2.3 Packaging and Unpackaging. Weapon or ordnance item packaging and unpacking procedures ensure safety, security, and protection from damage of weapons and stores during transfer or shipment. These procedures insure that no damage or moisture intrusion to the ammunition will occur during shipment or storage. A thorough visual inspection is performed to ensure that any safe and arm mechanisms are in the safe position and that no damage or corrosion is evident. Intermediate level aviation ordnance personnel will perform packaging or unpacking procedures in accordance with the applicable work packages in the technical manuals for the ordnance items concerned.

2.3.2.4 Cleaning. Cleaning consists of the removal of contaminants such as dirt, grease, oil, and other elements that aid corrosion. The mildest cleaning method available that will work effectively should be used. Refer to NAVAIR 01-1A-75 (Airborne Weapons and Associated Equipment, Consumable Material Applications and Hazardous Material Authorized Use List) (NOTAL) for approved cleaning materials and procedures.

2.3.2.5 Paint Touchup. Painting at the intermediate level is required to touch up areas which have been damaged by abrasion, superficial scratches, or in areas where the paint has been removed in order to treat corrosion. Refer to the applicable authorized technical manual for and NAVAIR 01-1A-75 (NOTAL) painting and marking procedures.

2.3.2.6 Replacement of Specified Components. Intermediate level aviation ordnance personnel are responsible for performing corrective maintenance to return repairable items to service. This maintenance is normally accomplished on items such as laser guided bombs, and aircraft parachute flare dispensers. This consists of replacement of defective parts, assemblies, fuzes, and the repair and testing of ordnance material and components. Parachute flare dispensers require maintenance and replacement of internal parts, breech cap replacement, or skin patching. Launchers and dispensers are also electrically tested at the intermediate level. Intermediate level maintenance manuals provide step-by-step procedures to accomplish these tasks.

2.3.2.7 Assembly and Disassembly. Assembly is an operation or series of operations that transform a weapon or item of ordnance from the configuration in which it is normally stored to the required flight configuration. Intermediate level aviation ordnance personnel assemble weapons and

stores for issue to organizational activities. These operations include unpacking the weapons and components, installing boosters, electric fuzes and fins on low drag general purpose bombs, assembling rocket fuzes, warheads and motors, and loading the assembled rounds into launchers, loading aircraft parachute flares into dispensers, and loading gun ammunition into linkless ammunition loading systems prior to delivery to user activities. Weapons returned to intermediate level activities are disassembled and returned to storage.

2.3.2.8 Improved Rapid Rearming System Mating. The loading procedures for selected airborne weapons incorporate the improved rapid rearming system concept. This method of loading requires suspension and release equipment to be mated to the weapon or weapons prior to delivery to the organizational level loading crews. This mating is accomplished by intermediate level aviation ordnance personnel. The intermediate level personnel deliver the assembled weapon and bomb rack combination to organizational level personnel and the combination is loaded directly to the aircraft bomb rack.

2.3.2.9 Ready Service Inspection. A ready service inspection is an inspection of a weapon that has been removed from its container, prepared for use, and placed in a ready service magazine prior to issue to a user activity. The inspection is performed by the intermediate level personnel responsible for issuing the weapon. A ready service inspection consists of inspecting the weapon for proper configuration, damage, loose or missing components, corrosion or other conditions that would render the weapon unsafe or hazardous. Shelf and service life of cartridge actuated devices, aircrew escape propulsion systems, and cartridges will also be checked during ready service inspections. A weapon that is determined to be not ready-for-issue shall be rejected and the proper authority notified.

2.3.2.10 Technical Directives. Intermediate level aviation ordnance personnel are responsible for assuring that technical directives such as notice of ammunition reclassifications and airborne weapon bulletins directed to that level are complied with.

2.3.2.11 Discrepancy Reporting. Discrepancy reports are initiated at intermediate level maintenance when a discrepancy is discovered during the performance of any of the assigned intermediate maintenance actions. Discrepancy reporting procedures are contained in chapter 4.6.

2.3.3 Record Keeping and Reporting. Intermediate level maintenance is responsible for ordnance and ammunition record keeping and reporting for both organizational maintenance and intermediate maintenance. Weapons or stores expended by organizational activities are reported to the intermediate level maintenance activity for entry into the Conventional Ammunition Integrated Management System.

2.3.4 Requisitioning

2.3.4.1 All ammunition necessary to support the ship's allowance, cargo, load, and air wing training requirements will be ordered by the weapons department. The weapons officer shall ensure timely submission of ammunition requisitions to meet planned operations. The weapons officer shall submit requisitions as provided in the current revisions of NAVSUP P-724 (NOTAL), and CINCPACFLTINST 8010.12 (NOTAL). All requisitions for conventional ammunition not to be filled from in-theater assets are sent to the Naval Inventory Control Point. Include the inventory manager as an information addressee in requisitions for non-fleet assets sent via administrative message.

2.3.4.2 All ammunition listed on the daily ordnance load plan will be issued automatically to support flight operations. Ammunition not included in the load plan (cartridge actuated devices, small arms, etc.) will be issued in the following manner: the requisitioning squadron or department shall submit a DD 1348 to the weapons department, indicating the type, naval ammunition logistics code, quantity, and

desired issue time. Upon arrival, the ammunition may be picked up at the designated delivery point, depending on the type and quantity of ammunition. Personnel picking up the ammunition shall be qualified and certified in accordance with applicable instructions. The air wing commander will provide a listing of certified personnel to the aviation weapons movement control station immediately upon embarkation of the air wing.

2.3.5 Explosives Handling Personnel Qualification and Certification (Qual/Cert) Program. Intermediate aviation ordnance personnel involved with the maintenance of airborne ordnance and ammunition must be trained, qualified, and certified in accordance with the requirements of OPNAVINST 8020.14/MCO P8020.11 (NOTAL) or MCO 8023.3 (NOTAL) and applicable type commander instructions.

2.3.6 Maintenance Training Requirements. Maintenance training is a continuous and ongoing process, conducted to ensure that personnel who operate, maintain, and support weapons systems and associated equipments are qualified to perform their respective functions. Formal and on-the-job maintenance training, for airborne ordnance and ammunition processed at intermediate level maintenance activities, may be augmented through the use of Engineering Technical Specialists/Fleet Weapons Support Team provided by the Naval Air Warfare Center, Weapons Division, Point Mugu, Ca. Volume I, chapter 4.4 provides procedures for requesting field service training and technical assistance. Volume I, section 6 provides additional information on all aspects of Naval Airborne Weapons Maintenance Training.

CHAPTER 2.4

Depot Level Maintenance

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CHAPTER 2.4

Depot Level Maintenance

2.4.1 General. This chapter discusses the ordnance and ammunition maintenance actions authorized to be performed by assigned weapons support facilities and industrial maintenance establishments. Depot level maintenance is conducted by two types of industrial establishments which are assigned specific maintenance actions in support of airborne ordnance and ammunition. Both types of establishments provide technical assistance in carrying out those functions which are beyond the responsibility or capability of the organizational or intermediate levels. The first group of assigned activities include Naval Weapons Stations and Weapons Station Detachments Earle, Charleston, Concord, Seal Beach, Fallbrook, and Yorktown; Army Ammunition Plant Hawthorne; Naval Undersea Warfare Center division; Indian Island Naval Magazine; and Army Ammunition Plant McAlester. Those activities are authorized to perform industrial type maintenance actions, such as shipment, storage, testing, cleaning, and repair actions on airborne ordnance and ammunition. The second group, which consists of various assigned industrial establishments, perform those actions required to maintain or restore the inherent design service levels of performance, reliability, and material condition; they span complete rebuild through reclamation, refurbishment, overhaul, repair, replacement, adjustment, servicing, and replacement of consumables. Those tasks are performed to the extent specified in applicable maintenance instruction manuals, operating and service instructions, or technical directives. The following paragraphs discuss the maintenance functions performed by depot level maintenance activities.

2.4.2 Industrial Maintenance Processing. Industrial maintenance activities perform those functions of storage, testing, maintenance, and repair on airborne ordnance and ammunition that are beyond the capabilities of lower level maintenance activities. Figures 2-4-1 through 2-4-16 assign the industrial maintenance actions performed on the airborne ordnance and ammunition listed in chapter 2.1 of this volume. Assigned maintenance actions are described generally in paragraphs 2.4.2.1 through 2.4.2.7. All maintenance actions are performed in accordance with approved technical manuals developed for each item or family of airborne ordnance and ammunition. The following is an explanation of the functions listed in the matrix.

2.4.2.1 Receiving Inspection. Receiving inspections are conducted by industrial establishment maintenance personnel and include inspection of containers, cradles, palletized ammunition, and all fleet returned ammunition received by or inducted into an industrial activity. Containers and cradles are inspected for correct markings, corrosion, moisture intrusion, and damage. A container or cradle that is dented, crushed, punctured, or appears to have been tampered with must be opened, and its contents must be inspected. Receiving inspections shall be conducted in accordance with applicable technical manuals.

2.4.2.2 Storage. All weapons, ordnance, and ordnance components will be stored by industrial establishment personnel in accordance with procedures outlined in NAVSEA OP 5, NAVSEA OP 3565/NAVAIR 16-1-529, and NAVSEA OP 3347 (U.S. Navy Ordnance Safety Precautions). Magazines used for storage of airborne ordnance and ammunition at industrial activities will be sufficiently remote from inhabited areas to confine the risks involved in storing ammunition primarily to the magazine area. Separate magazine storage will be provided for high explosives, fuzes and detonators, small arms ammunition, and chemical and smoke munitions. All magazines will be properly marked with placards showing the type of ordnance and ammunition stored therein. Movement of ordnance and ammunition in the magazine area will be accomplished using approved handling and moving equipment and all explosive drivers will be properly licensed. Industrial maintenance establishments ship ordnance and ammunition in response to direction by higher authority. The procedures and inspections incident to ammunition and explosives loading and shipment are prescribed in SW020-AC-SAF-010, (Navy Transportation Safety Handbook for Hazardous Materials) and OP 3681 (NOTAL) (Motor Vehicle and Railcar Shipping Inspector's Manual for Ammunition, Explosives, and Other Hazardous Materials). The regulations of the Department of Transportation apply to all motor vehicle carriers transporting ammunition and explosives in interstate or foreign commerce. Additional safety requirements governing intrastate shipments may be imposed by the individual states and by municipalities through which shipments will move. Navy vehicles transporting ammunition and explosives are subject

General Purpose Bombs	2.4.2.1 Receiving Inspection	2.4.2.2 Storage	2.4.2.3 Cleaning	2.4.2.4 Repair and Patch Thermal Coating	2.4.2.5 Testing and Component Replacement	2.4.2.6 Technical Directives	2.4.2.7 Discrepancy Reporting
MK 82	X	X	X	X	X	X	X
MK 831	X	X	X	X	X	X	X
MK 841	X	X	X	X	X1	X	X
BLU-109A/B1	X	X	X	X	X1	X	X
BLU-110A/B1	X	X	X	X	X1	X	X
BLU-111A/B	X	X	X	X	X1	X	X

NOTE: 1. JDAM has unique 20 year warranty with contractor (Boeing) all testing and repair to be done at contractor.

Figure 2-4-1. Industrial Depot Level Maintenance Responsibilities for General Purpose Bombs

General Purpose Bombs	2.4.2.1 Receiving Inspection	2.4.2.2 Storage	2.4.2.3 Cleaning	2.4.2.4 Repair and Patch Thermal Coating	2.4.2.5 Testing and Component Replacement	2.4.2.6 Technical Directives	2.4.2.7 Discrepancy Reporting
CBU-MK-20 Mods 3, 6, 9, 11, 12	X	X	X	X	X	X	X
CBU-78B CBU-78A/B CBU-78B/B CBU-78C/B CBU-78(T-1)B, A/B, B/B CBU-78(D-1)B, A/B, B/B	X	X	X	X	X	X	X
CBU-99/B CBU-99(T-1)B CBU-99A/B CBU-99B/B CBU-99(T-1)B/B CBU-99(D-1)B/B	X	X	X	X	X	X	X
CBU-100/B CBU-100(T-1)B CBU-100A/B CBU-100(T-1)B/B CBU-100(D-1)B/B	X	X	X	X	X	X	X

Figure 2-4-2. Industrial Depot Level Maintenance Responsibilities for Cluster Bombs

	2.4.2.1 Receiving Inspection	2.4.2.2 Storage	2.4.2.3 Cleaning	2.4.2.4 Repair and Patch Thermal Coating	2.4.2.5 Testing and Component Replacement	2.4.2.6 Technical Directives	2.4.2.7 Discrepancy Reporting
Fire Bombs							
MK 77	X	X	X			X	X

Figure 2-4-3. Industrial Depot Level Maintenance Responsibilities for Fire Bombs

	2.4.2.1 Receiving Inspection	2.4.2.2 Storage	2.4.2.3 Cleaning	2.4.2.4 Repair and Patch Thermal Coating	2.4.2.5 Testing and Component Replacement	2.4.2.6 Technical Directives	2.4.2.7 Discrepancy Reporting
Guided Bomb Units							
GBU-10	X	X	X	X	X	X	X
GBU-12	X	X	X	X	X	X	X
GBU-16	X	X	X	X	X	X	X
GBU-24	X	X	X	X	X	X	X
GBU-31	X	X				X	X
GBU-32	X	X				X	X
GBU-35	X	X				X	X

Figure 2-4-4. Industrial Depot Level Maintenance Responsibilities for Guided Bomb Units

	2.4.2.1 Receiving Inspection	2.4.2.2 Storage	2.4.2.3 Cleaning	2.4.2.4 Repair and Patch Thermal Coating	2.4.2.5 Testing and Component Replacement	2.4.2.6 Technical Directives	2.4.2.7 Discrepancy Reporting
Practice Bombs							
MK 76	X	X				X	X
MK 106	X	X				X	X
BDU-33D/B	X	X				X	X
BDU-45/B	X	X				X	X
BDU-48/B	X	X				X	X
LGTR/LGTR II	X	X				X	X

Figure 2-4-5. Industrial Depot Level Maintenance Responsibilities for Practice Bombs

	2.4.2.1 Receiving Inspection	2.4.2.2 Storage	2.4.2.3 Cleaning	2.4.2.4 Repair and Patch Thermal Coating	2.4.2.5 Testing and Component Replacement	2.4.2.6 Technical Directives	2.4.2.7 Discrepancy Reporting
Bomb Fuzes							
DSU-33B/B	X	X				X	X
FMU-139 (Series)	X	X				X	X
FMU-140 (Series)	X	X				X	X
FMU-143E/B	X	X				X	X
FMU-152 (Series)	X	X				X	X
MK 339 (Series)	X	X				X	X
MK 376 (Series)	X	X				X	X
M904 (Series)	X	X				X	X
MK 43 TDD	X	X				X	X

Figure 2-4-6. Industrial Depot Level Maintenance Responsibilities for Bomb Fuzes

	2.4.2.1 Receiving Inspection	2.4.2.2 Storage	2.4.2.3 Cleaning	2.4.2.4 Repair and Patch Thermal Coating	2.4.2.5 Testing and Component Replacement	2.4.2.6 Technical Directives	2.4.2.7 Discrepancy Reporting
Aircraft Gun Ammunition							
M50 Series 20-MM AMMO	X	X	X			X	X
MK 100 Series 20-MM AMMO	X	X	X			X	X
PGU Series 25-MM AMMO	X	X	X			X	X
.50 Caliber AMMO	X	X	X			X	X
7.62-MM NATO AMMO	X	X	X			X	X
PGU Series 20-MM AMMO	X	X	X			X	X

Figure 2-4-7. Industrial Depot Level Maintenance Responsibilities for Aircraft Gun Ammunition

	2.4.2.1 Receiving Inspection	2.4.2.2 Storage	2.4.2.3 Cleaning	2.4.2.4 Repair and Patch Thermal Coating	2.4.2.5 Testing and Component Replacement	2.4.2.6 Technical Directives	2.4.2.7 Discrepan- cy Report- ing
Misc. Cartridges and CADS							
MK 1 Impulse Cartridge	X	X				X	X
MK 2 Impulse Cartridge	X	X				X	X
MK 4 Impulse Cartridge	X	X				X	X
MK 8 Impulse Cartridge	X	X				X	X
MK 9 Impulse Cartridge	X	X				X	X
MK 19 Impulse Cartridge	X	X				X	X
MK 51 Impulse Cartridge	X	X				X	X
MK 124 Impulse Cartridge	X	X				X	X
MK 125 Impulse Cartridge	X	X				X	X
MK 67 Impulse Cartridge	X	X				X	X
MK 131 Impulse Cartridge	X	X				X	X
MK 23 Impulse Cartridge	X	X				X	X
MK 79 Signal	X	X				X	X

Figure 2-4-8. Industrial Depot Level Maintenance Responsibilities for Cartridges and Cartridge Actuated Devices

	2.4.2.1 Receiving Inspection	2.4.2.2 Storage	2.4.2.3 Cleaning	2.4.2.4 Repair and Patch Thermal Coating	2.4.2.5 Testing and Component Replacement	2.4.2.6 Technical Directives	2.4.2.7 Discrepancy Reporting
Rockets and JATO/RATO							
LAU-10 Launcher	X	X	X	X	X	X	X
LAU-61 Launcher	X	X	X	X	X	X	X
LAU-68 Launcher	X	X	X	X	X	X	X
2.75" FFAR	X	X	X		X	X	X
5.00" FFAR	X	X	X		X	X	X
JATO/RATO	X	X	X		X	X	X

Figure 2-4-9. Industrial Depot Level Maintenance Responsibilities for Rockets, Rocket Launchers, and JATO/RATO

	2.4.2.1 Receiving Inspection	2.4.2.2 Storage	2.4.2.3 Cleaning	2.4.2.4 Repair and Patch Thermal Coating	2.4.2.5 Testing and Component Replacement	2.4.2.6 Technical Directives	2.4.2.7 Discrepancy Reporting
Rocket Fuzes							
M414A1/ MK 93	X	X				X	X
M423	X	X				X	X
MK 352	X	X				X	X
FMU-136/B	X	X				X	X
Model 113A	X	X				X	X

Figure 2-4-10. Industrial Depot Level Maintenance Responsibilities for Rocket Fuzes

	2.4.2.1 Receiving Inspection	2.4.2.2 Storage	2.4.2.3 Cleaning	2.4.2.4 Repair and Patch Thermal Coating	2.4.2.5 Testing and Component Replacement	2.4.2.6 Technical Directives	2.4.2.7 Discrepancy Reporting
Rocket Warheads							
MK 1 MOD 5	X	X				X	X
MK 5 MOD 0	X	X				X	X
M157	X	X				X	X
MK 33	X	X				X	X
WDU-4A	X	X				X	X
MK 6 MOD 7	X	X				X	X

Figure 2-4-11. Industrial Depot Level Maintenance Responsibilities for Rocket Warheads

	2.4.2.1 Receiving Inspection	2.4.2.2 Storage	2.4.2.3 Cleaning	2.4.2.4 Repair and Patch Thermal Coating	2.4.2.5 Testing and Component Replacement	2.4.2.6 Technical Directives	2.4.2.7 Discrepancy Reporting
Flight Crew Escape Devices							
Impulse Cartridge MK 14	X	X				X	X
Catapult Ejection Seat Cartridge MK 103	X	X				X	X
MDC Detonator Cord	X	X				X	X
Rocket Motor MK 76	X	X				X	X

Figure 2-4-12. Industrial Depot Level Maintenance Responsibilities for PADS

	2.4.2.1 Receiving Inspection	2.4.2.2 Storage	2.4.2.3 Cleaning	2.4.2.4 Repair and Patch Thermal Coating	2.4.2.5 Testing and Component Replacement	2.4.2.6 Technical Directives	2.4.2.7 Discrepancy Reporting
Pyrotechnics							
MK 24 Paraflare	X	X			X	X	X
MK 45 Paraflare	X	X			X	X	X
LUU-2 Paraflare	X	X			X	X	X
MK 25 MLM	X	X			X	X	X
MK 58 MLM	X	X			X	X	X

Figure 2-4-13. Industrial Depot Level Maintenance Responsibilities for Pyrotechnics

	2.4.2.1 Receiving Inspection	2.4.2.2 Storage	2.4.2.3 Cleaning	2.4.2.4 Repair and Patch Thermal Coating	2.4.2.5 Testing and Component Replacement	2.4.2.6 Technical Directives	2.4.2.7 Discrepancy Reporting
Dispensers							
MJU-5/B	X	X		X	X	X	X
SUU-25	X	X	X	X	X	X	X
SUU-44	X	X	X	X	X	X	X

Figure 2-4-14. Industrial Depot Level Maintenance Responsibilities for Dispensers

	2.4.2.1 Receiving Inspection	2.4.2.2 Storage	2.4.2.3 Cleaning	2.4.2.4 Repair and Patch Thermal Coating	2.4.2.5 Testing and Component Replacement	2.4.2.6 Technical Directives	2.4.2.7 Discrepancy Reporting
Airborne Electronic Warfare Expendable Countermeasures							
Decoy Flares	X	X				X	X
Decoy RT-1489/ALE (GEN-X)	X	X				X	X
Chaff RR Series	X	X				X	X

Figure 2-4-15. Industrial Depot Level Maintenance Responsibilities for Countermeasures

	2.4.2.1 Receiving Inspection	2.4.2.2 Storage	2.4.2.3 Cleaning	2.4.2.4 Repair and Patch Thermal Coating	2.4.2.5 Testing and Component Replacement	2.4.2.6 Technical Directives	2.4.2.7 Discrepancy Reporting
Signals, Underwater Sound							
SUS	X	X				X	X

Figure 2-4-16. Industrial Depot Level Maintenance Responsibilities for Signals, Underwater Sound

to all safety regulations applicable to common carriers, as well as to the regulations of the Department of the Navy. Van type trucks and semitrailers are the preferred types of vehicles for transporting ammunition and explosives. Open-top, stake-body, or flatbed vehicles are acceptable for use (and preferred for the shipment of large crated items). Motor vehicles that transport ammunition and explosives shall conspicuously display placards with the words "Explosive A," "Explosive B," "Dangerous," or as otherwise prescribed by Department of Transportation regulations. The placards shall be located on each side, on the front, and on the rear. The placards shall be attached in such a way that they can be removed or covered whenever the vehicle is not loaded with ammunition or explosives. On-station vehicles engaged in towing explosive-loaded bomb trailers shall be appropriately placarded.

2.4.2.3 Cleaning. Cleaning consists of the removal of contaminants such as dirt, grease, salt spray, oil, and other elements that aid corrosion. Cleaning requires a knowledge of the materials and methods needed to remove each of these contaminants. As a general rule, the mildest cleaning method available that will work effectively is used. The corrosion manual addresses the specific procedures to be followed for each type of metal to be cleaned, as well as the proper material to be used. The corrosion control manual used for airborne ordnance and ammunition at depot level maintenance facilities is titled Airborne Weapons and Associated Equipment, Consumable Material Applications and Hazardous Material Authorized Use List. The corrosion manual's technical manual identification number is NAVAIR 01-1A-75 (NOTAL). NAVAIR 01-1A-75 addresses the authorized materials, applications, and procedures for preventive and corrective corrosion control measures. Specifically, the corrosion manual addresses the procedures to be followed for each type of substrate to be cleaned, as well as the proper material to be used. See volume I, section 4 for further details. Ordnance and ammunition are subject to preservation and painting procedures as part of depot level maintenance. Industrial maintenance personnel clean all surfaces before applying the coating, ensuring that no cleaning material residue is trapped in fasteners, points, etc.; these areas can become contaminated easily and corrosion will occur. While material such as oils and sealants act as a preservative, painting is generally the most effective means of preserving metal. The corrosion manual lists the cleaning materials, primers, and paints used in preservation and corrosion control.

2.4.2.4 Repair and Patch Thermal Coating. Thermal coating of weapons provides protection from heat and extends cookoff times when weapons are exposed to flames. This coating can be damaged by rough handling and must be

patched or replaced. Industrial establishments have the capability to accomplish this action and will do so when an inspection determines that a bomb, launcher, or dispenser has sustained chipping or peeling of the thermal coating sufficient to degrade the designed cookoff time. Personnel must use extreme caution while storing, mixing, or applying the thermal coating material. Refer to the applicable technical manual and NAVAIR 01-1A-75 (NOTAL) for storage, mixing, and patching procedures and the acceptance or rejection criteria for thermal coating missing from a weapon.

2.4.2.5 Testing and Component Replacement. Industrial establishments are responsible for testing ordnance and ammunition to determine necessary corrective maintenance actions. Laser guided bomb computer control groups returned to a depot level activity in non ready-for-issue status are tested to determine their condition. Rocket launchers and parachute flare dispensers repaired at depot level activities are tested for proper operation before being placed in ready-for-issue condition. Pyrotechnic devices are routinely tested as part of an ongoing quality control program. Figure 2-4-18 depicts the current functions and capabilities of industrial establishments that conduct these tests. Components found to be defective, worn, or damaged during inspection or test will be replaced, and the end item concerned will be retested to ensure the item is ready-for-issue before being returned to service.

2.4.2.6 Technical Directives. Industrial maintenance personnel are not only responsible for assuring that technical directives, airborne weapon bulletins, airborne weapon changes, and notice of ammunition reclassifications are complied with, they also assist in the development and verification of technical directives that ultimately affect them. This assistance includes engineering change proposal review, development of the resulting technical directive, and verification prior to implementation of the technical directive.

2.4.2.7 Discrepancy Reporting. Discrepancy reports are initiated when a discrepancy is discovered during performance of any of the assigned maintenance actions. Discrepancy reporting procedures are contained in volume I chapter 4.6 of this instruction.

2.4.3 Explosive Maintenance or Rework. Activities assigned to perform explosive depot level maintenance are listed in figure 2-4-18. Figure 2-4-19 depicts assigned maintenance actions for these activities. Maintenance actions include: (1) maintenance and modification required for the rework and repair of airborne ordnance and ammunition; (2) manufacture of items and component parts otherwise not available when action is deemed necessary and is

	NWS Earle	NWS Charleston	Hawthorne AAP	NWS Concord	Crane AAA	Indian Island Det	NWS Seal Beach	McAlester AAP	NWS Yorktown
Facilities with Conductive Flooring	X	X	X	X	X	X	X	X	X
Temperature and Humidity Controlled Environment			X	X	X			X	
Class I, Div 3 Explosives Storage Capacity (250,000 lbs or more)	X	X	X	X	X	X	X	X	X
Class I, Div 3 Explosives Storage Capacity (5,000 lbs or more)	X	X	X	X	X	X	X	X	X
Temperature and Humidity			X	X	X	X	X	X	
Aircraft Vibration				X	X	X			
Pyrotechnic Function Test Facilities (Illumination Candles/Smoke Signals)			X		X	X	X		
Seal/Leak Testing			X	X	X	X	X	X	
X-ray			X	X	X	X	X	X	X
Illumination Candle-power Measurement/Recording					X	X	X		
Simulated Altitude Function Testing for Infrared Flares					X	X			
Infrared Function Testing (Infrared data/burn time recording)					X	X			
Infrared Equipment Calibration				X	X	X			
Tool Design and Fabrication	X	X	X		X	X	X	X	X
Container Repair	X	X	X		X	X	X	X	X

Figure 2-4-17. Maintenance Functions and Capabilities for NAVAIRSYSCOM Pyrotechnic Devices

Munition	NAVSURF- WARCEN- DIV Indian Hd	Naval Ammunition Depot Crane	Army Ammunition Plant Hawthorne	Naval Supply Center Oakland	Naval Supply Center Norfolk	Naval Air Station Cecil Field Weapons Department	Naval Weapons Evaluation Facility Kirkland AFB	NAVSURF- WARCEN- DIV Indian Hd McAlester Detachment
FAE CBU-55/B			X					
FAE CBU-72/B			X					
GATOR CBU-78/B			X					
ROCKEYE CBU-20		X						
LGBs				X				
AEPS	X							
JATO/RATO	X							
Pyrotechnics	X							
Rocket Motors	X							

Figure 2-4-18. Assignment of Airborne Ordnance and Ammunition Responsibilities to Explosive-Capable Depot Level Activities

Munition	2.4.3.1 Renovation and Repair	2.4.3.2 Incorporation of Design Changes	2.4.3.3 Inspect and Test	2.4.3.4 Manufacture of Parts and Kits	2.4.3.5 Explosive and Chemical Refilling	2.4.3.6 X-ray of Components	2.4.3.7 Corrosion Control and Preservation	2.4.3.8 Demilitar- ization of Ammunition
FAE CBU-55/B	X	X		X	X		X	X
FAE CBU-72/B	X	X		X	X		X	X
GATOR CBU-78/B	X	X		X	X		X	X
ROCKEYE CBU-20	X	X		X	X		X	X
Guided Bomb Unitss	X	X		X			X	X
AEPS	X	X		X		X	X	X
JATO/RATO	X	X		X		X	X	X
Pyrotechnics	X	X				X	X	X
Rocket Motors	X	X		X		X	X	X

Figure 2-4-19. Explosive-Capable Depot Level Maintenance Responsibilities for Ordnance/Ammunition

appropriately authorized; and (3) provision of support services functions, including professional engineering, technology, and calibration services, and field teams to support organizational and intermediate level maintenance when required and directed. Following are those maintenance actions generally performed by explosive-capable maintenance establishments. Because of the wide variety of tasks accomplished by the activities, only major functions are discussed. Assigned maintenance actions are described generally in paragraphs 2.4.3.1 through 2.4.3.8.

2.4.3.1 Renovation and Repair. Explosive-capable personnel perform renovation and repair, which is the reworking of a munition to return it to ready-for-issue status. It includes replacing worn or defective parts, repairing damaged components, and installing new components to replace those whose service life has expired. It also includes packaging and palletizing items for shipment and storage.

2.4.3.2 Incorporation of Design Changes. Explosive maintenance or rework also includes all modification actions required to change or improve design levels of performance, reliability, and material. The term modification, as used in this instruction, includes alteration, conversion, engineering change, modernization, etc.

2.4.3.3 Inspect and Test. Ordnance items or weapons which have been renovated or modified by an explosive-capable maintenance activity are inspected and tested as required to assure the quality and accuracy of the work accomplished. Ordnance items which have been sent to explosive-capable maintenance activities for testing include items which have failed a test at an industrial depot level establishment, such as a naval weapons station, and require testing on more sophisticated equipment to determine their actual condition. Items which are under manufacturer's warranty may be inspected only to the extent allowed by the warranty provisions as specified in the applicable Naval Air Systems Command (COMNAVAIRSYSCOM) technical publications or other appropriate directives.

2.4.3.4 Manufacture of Parts and Kits. Design changes or improvements in weapons or ordnance items require new parts or change kits to be manufactured and provided to industrial depot level activities, along with intermediate or organizational level maintenance activities for on-site incorporation.

2.4.3.5 Explosive Refilling. Weapons or weapon components which contain explosives with limited service life are returned to explosive-capable depot level maintenance activities at service life expiration for renovation and refilling. Upon accomplishment of the refilling process, the items are reissued with a new service life expiration date.

2.4.3.6 X-ray of Components. Most ordnance items require periodic inspection of internal conditions by means of X-ray. That method of inspection is usually done by explosive-capable personnel on items such as rocket motors to ensure the integrity of the propellant grain. Other weapons may require X-ray inspection if there is suspicion that the weapon has been dropped or damaged to the extent that internal damage may have occurred.

2.4.3.7 Corrosion Control and Preservation. Explosive-capable maintenance activities perform both minor and major corrosion control treatment on weapons and ordnance-related items. Routine corrosion control is performed on all items that pass through the depot as part of the normal process. Items which are returned to the depot and are determined to be severely deteriorated are, if economically feasible, given extensive corrosion control treatment to return them to ready-for-issue stock. Painting and preservation of items is done to the extent required by the depot maintenance requirements for the particular item, and type preservation required for the item. The corrosion control manual used for airborne ordnance and ammunition at some depot level maintenance facilities is titled Airborne Weapons and Associated Equipment, Consumable Material Applications and Hazardous Material Authorized Use List. The corrosion manual's technical manual identification number is NAVAIR 01-1A-75 (NOTAL). This generic manual addresses the authorized materials, applications, and procedures for preventive and corrective corrosion control measures. See volume I, section 4 for further details.

2.4.3.8 Demilitarization of Ammunition. Demilitarization is the act of destroying the military offensive or defensive capability of that ammunition. Explosive maintenance activities carry out this task by cutting, crushing, scrapping, melting, dumping at sea, burning, or exploding ammunition to prevent further use of the item for its originally intended military purpose.

2.4.4 Record Keeping and Reporting. Depot level maintenance is responsible for all record keeping and reporting actions related to testing and processing ordnance and ammunition. This includes Conventional Ammunition Integrated Management System reporting requirements, local applicable directives, and maintenance data system reporting. The maintenance data system and Conventional Ammunition Integrated Management System are described in volume I section 5 of this instruction.

2.4.5 Explosives Handling Personnel Qualification and Certification (Qual/Cert) Program. Depot maintenance personnel involved with the maintenance of airborne ordnance and ammunition must be trained, qualified, and certified to perform these maintenance actions in accordance

with the requirements of OPNAVINST 8020.14/MCO P8020.11 (NOTAL).

2.4.6 Maintenance Training Requirements. Maintenance training is a continuous and ongoing process, conducted to ensure that personnel who operate, maintain, and support weapons systems and associated equipments are qualified to perform their respective functions. Formal and

on-the-job maintenance training, for airborne ordnance and ammunition processed at industrial level maintenance activities, may be augmented through the use of Engineering Technical Specialists/Fleet Weapons Support Team provided by the Naval Air Warfare Center, Weapons Division, Point Mugu, CA. Volume I, chapter 4.4 provides procedures for requesting field service training and technical assistance. Volume I, section 6 provides additional information on all aspects of Naval Airborne Weapons Maintenance Training.

SECTION 3

Aircraft Guns

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CHAPTER 3.1

Introduction

3.1.1 General. This section addresses maintenance program management of aircraft guns and gun systems. Maintenance program management, during a weapon system's deployment life cycle phase, is a critical management function due to the impact of maintenance requirements on the effective use of personnel, materials, facilities, and fiscal resources. Maintenance program management functions include maintenance planning, coordinating, budgeting, and evaluating program progress. Aircraft guns are assigned a two-digit Navy stock number prefix that identifies technical and inventory management responsibilities. Aircraft guns are assigned cognizance code 6B and are under the technical cognizance of the Naval Air Systems Command (COMNAVAIRSYSCOM). Inventory management responsibilities are assigned to the Naval Ammunition Logistics Center (NAVAMMOLOGCEN) Mechanicsburg PA.

3.1.2 Responsibilities

3.1.2.1 The Assistant Commander for Fleet Support and Field Activity Management (AIR-3.0), through the Logistics Management Division (AIR-3.1), is responsible for the program management and funding of airborne weapons maintenance programs. COMNAVAIRSYSCOM (AIR-3.1) is responsible for management, integrated logistics support, and maintenance engineering functions pertinent to airborne weapon systems under COMNAVAIRSYSCOM cognizance.

3.1.2.2 Assistant Program Managers, Logistics (APML) within COMNAVAIRSYSCOM (AIR-3.1) plan and implement integrated logistics support and project support management activities for major weapon systems. APMLs are responsible directly to weapon system program managers, air or air program coordinators for logistics aspects of acquisition programs from inception through deployment and eventual phaseout from the active inventory. COMNAVAIRSYSCOM (AIR-3.1) APMLs are directly responsible to the Director AIR-3.1 for the effective planning and development of operationally effective and cost-effective support systems for acquisition programs.

3.1.2.3 Volume I chapter 2.2 defines maintenance functions that apply to aircraft guns and gun systems. Volume I

chapter 2.3 assigns maintenance responsibilities that apply to aircraft guns and gun systems. Chapters 3.2, 3.3, and 3.4 describe organizational, intermediate, and depot level maintenance actions that apply to aircraft guns and gun systems.

3.1.3 Applicability. This section applies to the aircraft guns and gun systems described below. Figure 3-1-1 further breaks down these guns and gun systems by model and application.

3.1.3.1 GAU-12/U 25mm Gun System. The GAU-12/U utilized in the AV-8B aircraft is a pneumatically driven, 5 barreled, rotary action, air cooled, percussion fired weapon, with a rate of fire of 3600 rounds per minute. The gun system consists of two paks, one contains the GAU-12/U gun subsystem, gun pak and the other contains the ammunition handling subsystem ammo pak. The paks are linked together by a crossover assembly that houses interfacing components. The gun system has a capacity of 300 rounds of linkless 25mm percussion primed ammunition.

3.1.3.2 GAU-15/A (XM-218) Cal. 50 Machine Gun. The GAU-15/A utilized on the H-46, UH-1N and H-53 series aircraft is a crew served, recoil operated, belt fed, air cooled, percussion fired weapon, with a rate of fire of 750 rounds per minute. The gun system consists of the GAU-15/A (XM-218) cal. 50 machine gun, a pintle mount assembly, brass collection bag, and ammunition can bracket assembly. The pintle mount assembly is attached at personnel or cargo doors or windows of the aircraft. The ammunition can bracket holds a single 100 round can of linked cal. 50 percussion primed ammunition. Additional cans of ammunition are carried inside the aircraft to allow for rapid reloading.

3.1.3.3 GAU-16/A Cal. 50 Machine Gun. The GAU-16/A utilized with the defensive armament system (DAS) on the UH-1N aircraft. The only differences between the GAU-16/A and the GAU-15/A is in a reconfigured trigger mechanism and front sight assembly on the GAU-16/A. The GAU-16/A is attached to the DAS system using a shock absorbing "soft" mount assembly that removes up to 75 percent of the recoil forces generated during firing. The GAU-16/A and the soft mount assembly is being evaluated for use on the H-46, H-53, and H-60 aircraft.

Gun or Gun System	AH-1W	AV-8B	A-4	F/A-18	F-14	H-2 H-3	H-46 H-53	H-60	UH-1N
GAU-12/U 25mm		X							
GAU-15/A Cal. 50 (XM-218)							X		X
GAU-16/A Cal. 50								X	X
GAU-17/A 7.62mm (GAU-2B/A)								X	X
GPU-2/A 20mm Gun Pod	X		X						
M-60D 7.62mm						X	X	X	X
M240D 7.62mm								X	X
M61A1 20mm				X	X				
M61A2 20mm				X					
M-197 20mm	X								
MK-12 20mm			X						

Figure 3-1-1. Aircraft Gun System Application.

3.1.3.4 GAU-17/A (GAU-2B/A) 7.62mm Machine Gun. The GAU-17/A utilized on the UH-1N, H-3, and H-60 aircraft, is a crew served, electrically driven, 6 barreled, rotary action, percussion fired weapon, with a maximum rate of fire of 6000 rounds per minute. In the current crew served application the rate of fire is selectable at either 2000 or 4000 rounds per minute. In the UH-1N DAS configuration the gun can be fixed forward and remotely fired by the pilot. The components that make up the GAU-17/A gun system consist of a gun control assembly with electrical cables, gun drive motor, a MAU-201/A or a MAU-56 delinking feeder, flexible ammunition feed chutes and an ammunition storage system. The ammunition storage system has a capacity of 4000 rounds of linked 7.62mm percussion primed ammunition.

3.1.3.5 GPU-2A 20mm Gun Pod. The GPU-2A gun pod can be utilized by the AH-1 helicopter. The GPU-2A is a self contained gun pod that mates the M-197 20mm automatic gun to a single ended linkless ammunition handling system, with a capacity of 300 rounds of linkless M-50 or PGU series 20mm electrically primed ammunition. The gun pod is self contained in that it houses a battery and gun control assembly which maintains the electrical power requirements well within capabilities of the parent aircraft. The GPU-2A is remotely fired utilizing cockpit controls to the gun control assembly in the gun pod. This allows a selectable rate of fire of either 750 or 1500 rounds per minute.

3.1.3.6 M240D 7.62mm machine gun. The M240D 7.62mm machine gun is a left hand feed, gas operated, air cooled, fixed head space weapon. The M240D has two possible configurations: aircraft and egress (ground). In the aircraft configuration the M240D has a front and rear sight and a trigger group which accommodates the spade grip device. The ground configuration involves the installation of an Egress Package which is designed to provide downed aircrew personnel with increased fire power. The Egress Package contains a buttstock assembly, a buffer assembly, a bipod assembly, and a conventional trigger assembly. The M240D is issued for aircraft configuration. The barrel assembly contains a three position gas plug. The first gas plug position allows the weapon to cycle at 750 shots-per-minute (SPM). The two remaining ports increase the SPM by 100 each (I.E., gas port position 2 = 850 SPM; gas port position 3 = 950 SPM). The aircraft configured M240D weighs 25.6 lb. and is 42.3 inches long. The egress configuration weighs 26.2 lb. and is 49.0 inches long.

3.1.3.7 M-60D 7.62mm Machine Gun. The M-60D machine gun utilized by the UH-1, H-2, H-3, and H-60 aircraft. Depending in the specific aircraft application the M-60D gun system consists of the gun, a pintle mount (M-21, M-23, or DAS), and one of two basic ammunition storage systems. The first storage system consists of an ammunition can

bracket that mounts to the gun or the mount, the bracket holds a single 200 round ammunition can. The second ammunition storage system is made up of a 500 round ammunition can and a flexible feed chute attached to the base of the mount.

3.1.3.8 M61A1/M61A2 20mm Automatic Gun. The M61A1 utilized by the F-14 and F/A-18 aircraft is a hydraulically driven, 6 barreled, rotary action, air cooled, electrically fired weapon, with selectable rates of fire of either 4000 or 6000 rounds per minute. The M61A2 20 mm light weight gun is utilized in the F/A-18 aircraft only. The gun system is mated to a linkless ammunition storage and handling system. The F-14 has a capacity of 676 rounds while the F/A-18 has a capacity of 578 rounds of 20mm linkless M-50 or PGU series electrically primed ammunition.

3.1.3.9 M-197 20mm Automatic Gun. The M-197 gun utilized by the AH-1 aircraft is an electrically driven, 3 barreled, rotary action, air cooled, electrically fired weapon with a rate of fire of 650 rounds per minute. The M-197 in the AH-1 is mated to an ammunition storage and handling system that has a capacity of 700 rounds of linked M-50 or PGU series electrically primed ammunition. The M-197 utilizes the M-89 or M-89E1 declutching feeder to delink and feed ammunition into the gun. The M-197 is attached to the A/A49E-7 turret assembly that provides the sighting, positioning (200 degrees azimuth and 60 degrees elevation), and firing the gun.

3.1.3.10 MK-12 20mm Automatic Gun. The MK-12 gun utilized in the A-4 aircraft is a fixed mounted, gas blow back, air cooled, electrically fired, pneumatically driven weapon, with a rate of fire of 1000 rounds per minute. The MK-12 is dependent upon an outside source for electrical and pneumatic power requirements. A MK-7 feed mechanism mates the gun to the ammunition system that has a capacity of 100-200 rounds of linked MK-100 series 20mm electrically primed ammunition.

3.1.4 Maintainability Philosophy. The maintenance philosophy for aircraft guns, gun systems, and components is based on the three level (Organizational, Intermediate, and Depot) concept that is standard through naval aviation maintenance. This philosophy requires that inspections and maintenance tasks be performed at the lowest level capable of performing the required task. Within this philosophy and concept, maintenance tasks fall into the categories, scheduled and unscheduled. Scheduled maintenance includes those tasks that are performed when the gun, gun system, or component meets predetermined conditions, such as time, cycles, or certain environmental conditions, and as such scheduled maintenance is primarily preventative in nature. Detailed scheduled maintenance requirements are set forth in applicable technical manual or publication for the specific

aircraft gun, gun system, or component. Unscheduled maintenance includes those tasks that are performed to repair or correct a malfunction that occurs during the operation of the gun, gun system, or component. Unscheduled maintenance tasks are performed in strict compliance with applicable technical manuals and publications that apply to the specific gun, gun system, or component. When an inspection or task is beyond the capabilities of a maintenance level the gun, gun system, or component will be sent to the next higher level maintenance activity. Under normal circumstances when a gun, gun system or component requires induction into the higher level, a replacement is requested from the pool manager, supply system or the next higher level activity providing support. Maintenance actions at all levels is performed in accordance with approved COMNAVAIRSYSCOM technical manuals and publications. These manuals and publications include Aircraft Loading Manuals and Weapon Check List, Maintenance Instruction Manuals (MIMs), Illustrated Parts Breakdown (IPBs), Maintenance Requirement Cards (MRCs), and Technical Directives (TDs) such as aircraft, armament, weapons bulletins and changes that apply to the specific gun, gun system, or component. A listing of the applicable and approved technical manuals and publications are contained in NAVAIR 01-700 and NAVSUP 2002.

3.1.5 Gun System Security. OPNAVINST 5530.13B (NOTAL) sets forth minimum protection measures, applicable policies, standards, criteria, and procedures governing the physical security of aircraft guns, gun parts, sensitive conventional arms, and ammunition and explosives owned and in the custody of the Navy and the Marine Corps.

3.1.6 Scheduled Removal Component Card and Aeronautical Equipment Service Record

3.1.6.1 The Scheduled Removal Component (SRC) Card, Equipment History Record (EHR) card, and Equipment Operating Record (EOR) sheets will be maintained as part of the aircraft log book as long as the gun, gun system, or component is installed on the aircraft. When the gun, gun system, or component is removed from aircraft the cards will accompany the item. See Figure 3-1-2 for aircraft guns and/or related equipment requiring OPNAV 4790 Forms.

3.1.6.2 SRC, EHR cards, and EOR sheets provide managers with the status, maintenance, and operational history of a gun, gun system, or component, to include transfer and receipt accounting data. The cards/sheets reflect all maintenance actions, modifications or configurations that have been performed to the item at each maintenance level. Additionally, the cards/sheets serve as a record of rounds fired,

which aid in determining scheduled maintenance requirements and intervals. SRC, and EHR cards, and EOR sheets are maintained at maintenance level that have physical custody of the item. When a gun, gun system, or component is transferred a copy of all cards/sheets will be forwarded to the Fleet Support Team (FST). The only exceptions are transfers between pool managers and user activities. The FST for all guns, gun systems, and components is:

Commander
NAVAIRWARCENWPNDIV
Code 311200E
575 I Avenue, Suite 1
Point Mugu, CA 93042-5049

3.1.6.3 Appendix H contains examples of SRC, and EHR cards, and EOR sheets in addition to providing instructions for completing the cards/sheets.

a. SRC cards (OPNAV 4790/28A) are a two page form utilized to record installation, removal data, technical directive compliance, and repair/rework/overhaul tasks performed for items that have a scheduled removal interval.

b. EHR cards (OPNAV 4790/113) are a two page form utilized to record installation, removal, maintenance, inspection, and technical directive compliance for items not covered by SRCs.

c. EOR sheets (OPNAV 4790/31A) are utilized with all items that require multiple entries of similar data or as a worksheet for accumulating data. Normally utilized to record the rounds fired by a specific gun, gun system, or component.

3.1.7 Gun System Disposition from Stricken/Stored Aircraft

3.1.7.1 These policies and procedures apply to the removal and disposition of guns 20mm and larger and associated equipment from aircraft destined for storage or strike.

3.1.7.2 Storage (stored) aircraft are removed from the active inventory and set aside as a contingency reserve.

3.1.7.3 Stricken (strike) aircraft are stricken from the list of Navy aircraft as Category 1, Damage; Category 2, Depreciation; Category 3, Administration; or Category 4, Completed Service Life.

		OPNAV 4790/FORMS										
SYSTEM	P/N	22A	23A	24A	25A	27A	28A	29	31A	113	136A	PENALTY
.50 Cal Gun GAU-16/A	1698AS190						X					500 RDS
7.62 mm Gun GAU-17A	218F833						X					7500 RDS
Declutch Feeder M89E1	12007300						X					7500 RDS
20 mm Gun M197	11838579						X					7500 RDS
Turret Assy	218F457						X					24 MONTHS
Delinking Feeder MAU-56/A	11701120						X					7500 RDS
Delinking Feeder MAU-201/A	218F830						X					7500 RDS
7.62 mm Gun M60D	11699750						X					2500 RDS
.50 Cal Gun XM-218	11691500						X					500 RDS
20 mm POD GPU-2/A	537A5100	X	X	X		X		X	X		X	7500 RDS
25 mm Gun Subsys GAK 14	1395AS101	X	X	X		X		X	X			N/A
25 mm Gun PAK Structure Assy	75A732506- 1005/1009						X					N/A

Figure 3-1-2. Guns Related Equipment Requiring OPNAV 4790 Forms

		OPNAV 4790/FORMS										
SYSTEM	P/N	22A	23A	24A	25A	27A	28A	29	31A	113	136A	PENALTY
25 mm Gun Subassy	1395AS382						X					N/A
Pneumatic Drive Unit	1395AS106-2						X					N/A
Pressure Reg. Shutoff Valve	1395AS164-3						X					N/A
25 mm Improved Blast Deflector	75A732801-1003						X			X		N/A
25 mm AHS GFK 11	1395AS102	X	X	X		X		X	X		X	N/A
AHS PAK Structure Assy	75A732707 *						X					N/A
Electronic Control Unit	1395AS1066						X			X		N/A
20 mm Gun A/A49-A1	211F930	X	X	X		X		X	X		X	500 RDS
Transfer Unit Assy	175F632						X					7500 RDS
Drum Unit Assy	101D4584						X					7500 RDS
Drum Unit Assy	189F317						X					7500 RDS
Transfer Unit Assy	217F491						X					7500 RDS
20 mm M61A1 Gun	7791641						X					7500 RDS

Figure 3-1-2. Guns/Related Equipment Requiring OPNAV 4790 Forms (Cont'd)

		OPNAV 4790/FORMS										
SYSTEM	P/N	22A	23A	24A	25A	27A	28A	29	31A	113	136A	PENALTY
20 mm M61A2 Gun	12913464/-1						X					7500 RDS
Ammo Drum	209F486						X					7500 RDS
Entrance Unit Assy	209F487						X					7500 RDS
Exit Unit Assy	209F537						X					7500 RDS
Hydraulic Drive Unit	211F359-2						X					N/A
Hydraulic Drive Unit	209F328						X					N/A
Unload/Drive Unit	209F335						X					7500 RDS
Feeder, Auto Gun	209F334						X					N/A
Transfer Unit Assy	201F316						X					7500 RDS
Aircraft Adapter Assy	189F292						X					7500 RDS
Aircraft Adapter Assy	218F516						X					7500 RDS
Exit Unit Assy	175F846						X					7500 RDS
Entrance Unit Assy	175F830						X					7500 RDS
Drive Assy	537AS333						X					7500 RDS
Conveyor Assy	537AS170						X					7500 RDS
Drum Assy	537AS160						X		X			7500 RDS

Figure 3-1-2. Guns/Related Equipment Requiring OPNAV 4790 Forms (Cont'd)

		OPNAV 4790/FORMS										
SYSTEM	P/N	22A	23A	24A	25A	27A	28A	29	31A	113	136A	PENALTY
7.62 mm Gun GAU-2B/A	65F9877						X					7500 RDS
20 mm MK 12 MOD 4	4902501						X		X			1500 RDS
20 mm Feed Mech MK 7 MOD 3	4902502						X		X			1500 RDS
Blast Diffuser	74A130202-100 9/1011						X					7500 RDS
Blast Diffuser	74A730202-100 7						X					2500 RDS
NOTES												
1. For all items with an "*" designation, associated dash numbers are applicable.												
2. All OPNAV Forms without available space for further entries must be attached to a newly created OPNAV Form. Accurate Maintenance History of the item monitored must be readily attainable.												
3. Entries on all OPNAV Forms should be typed or written legibly in ink.												
4. Actual rounds counts shall be used for SRC, OR and EHR card entries.												
a. Enter all known applicable data on the appropriate OPNAV Form.												
b. Title the blank column on OPNAV Form 4790/31A (1/84) rounds fired and used for talley.												
c. If rounds fired or service time is unknown, enter the rounds fired or service time penalty on the appropriate OPNAV Form.												
d. At no time will subject equipment be zeroed when substantiating information is not available. Exception: The rounds fired penalty does not apply to zeroed equipment reworked by Depots.												
5. Update the appropriate OPNAV Forms prior to transfer of equipment. Current accurate records are essential.												

Figure 3-1-2. Guns/Related Equipment Requiring OPNAV 4790 Forms (Cont'd)

3.1.7.4 Associated equipment is any equipment or material that constitutes an operating gun system or aircraft ammunition handling system.

3.1.7.5 Guns and all associated equipment are to be removed from aircraft designated for storage or strike and turned - into the supply system as a Condition Code F asset. Indicate on the AESR, SRCs, and other log books the equipment removed and dispositioned. Include serial numbers, MK/MOD, part numbers, and nomenclature.

3.1.8 Small Arms Allowances/Disposition

3.1.8.1 NAVSEAINST 8370.2 shall apply for establishing initial allowance, changing authorized unit activity allowance and for disposition of small arms (except aircraft crew-served machine guns, less than 20mm) and associated equipment. NAVSEAINST 8370.2 does not apply to USMC small arms allowances.

3.1.9 Aircraft Machine Gun Allowances

3.1.9.1 The Aircraft Gun Weapon System Planning Document (WSPD) is a basic policy and planning document, published by COMNAVAIRSYSCOM. It contains the approved Chief of Naval Operations, Commander, Naval Air Systems Command, and Commandant of the Marine Corps official gun allocations for a given aircraft. Request for change to allocation is as specified in each WSPD. Since the WSPDs are the basic planning documents for budgeting and procurement of additional A/C guns and replenishment and spare guns, it is essential that WSPD allocations be accurately maintained:

- a. XM-218 Cal. 50 Aircraft Machine Gun and GAU-16A .50 Cal Aircraft Machine Gun.
- b. MK-12 MOD-4 Aircraft Machine Gun.
- c. A/A49E-10 25mm Gun System.
- d. M61A1 20mm Automatic Gun.
- e. M197 20mm Automatic Gun Pod and GPU-2/A Aircraft Gun and the GPU-2/A Aircraft Gun Pod.
- f. M60 Machine Gun.
- g. GAU-2B/A and GAU-17/A 7.62mm Machine Gun.
- h. M240D Machine Gun

3.1.10 Maintenance Planning Data

3.1.10.1 Maintenance planning data is required for budgeting and depot work loading for repair and overhaul of gun systems. Total inventory assets, Beyond Capability Maintenance (BCM), Non-Ready For Issue (NRFI) assets and projected depot high times are an essential maintenance factor. These factors are used to ensure adequate budget requirements for depot rework, repair and overhaul of A/C guns.

3.1.11 Semi-Annual Inventory Reporting

3.1.11.1 COMNAVAIRLANT, COMNAVAIRPAC, CNATRA, and COMNAVAIRESFOR will collect, consolidate and forward to the Commander, Naval Air Warfare Center Weapons Division Point Mugu, CA Code 311200E.

1. The report dated 20 January will cover the period of 1 July through 31 December. The report dated 20 July will cover period of 1 January through 30 June.

2. Reports will be submitted via unclassified naval message, routine precedence to: COMNAVAIRWAR-CENWPNDIV. PT. MUGU CA//311200E//.

3. Marine Aircraft Wings will consolidate quarterly reports and provide information to COMNAVAIRLANT, COMNAVAIRPAC, CNATRA, and COMNAVAIRESFOR with informational copies of consolidated semi-annual reports to be submitted to COMMARFORLANT or COMMARFORPAC as appropriate.

a. Reports will cover the following guns, gun systems, and components.

- (1) GAU-12/U 25mm
- (2) GAK-14/A49E-10 25mm Gun Subsystem
- (3) GFK-11/A49E-10 25mm Ammunition Handling System
- (4) M61A1 20mm
- (5) M61A2 20mm
- (6) A/A49-A-1 20mm Double Ended Linkless Gun System
- (7) M197 20mm
- (8) M89E1 Declutching Feeder
- (9) A/A49E-7 (V4) 20mm Point and Suppressive Fire System (Turret)
- (10) GPU-2/A 20mm Gun Pod
- (11) GAU-17/A 7.62mm
- (12) GAU-2B/A 7.62mm
- (13) MAU-56/A Delinking Feeder

14. MAU-201/A Delinking Feeder
15. M-60D 7.62mm
16. GAU-16/A Cal .50 (UH-1N)
17. XM-218 Cal .50
18. M240D 7.62mm
19. DAS A/A49E-11 (UH-1N)
20. A/A49E-13 Armament Subsystem (HH-60)
21. MK-12 20mm
22. MK-7 Feed Mechanism

b. Report format will include the following:

(1) Column A. Nomenclature (or line No.) of gun, gun system, or component, from paragraph a above.

(2) Column B. Previous on hand balance (Qty. from Column I last report).

(3) Column C. Allowance.

(4) Column D. Quantity issued/assigned to user activities.

(5) Column E. Quantity on hand RFI pool.

(6) Column F. Quantity on hand NRFI pool.

(7) Column G. Quantity that will reach high time and require to overhaul/depot rework activity.

(8) Column H. Quantity of combat/noncombat losses.

(9) Column I. Grand total assets on hand. (Columns D, E, and F equal Column I).

(10) Column J. NOTES: (Numbered sequentially, detailed at the end of the report).

Example of Notes:

1. 2 Awaiting parts, 1 Awaiting AAC-XXX, 1 Awaiting Shipment to Depot.

2. 2 Lost, Aircraft Strike.

3. Received/Transferred 2 From/To activity name.

c. Required Notes:

(1) Nomenclature (or line No.) of gun, gun system, or component, from paragraph a.

(2) User Activity.

(3) Serial Number (if applicable).

Example of Required Notes:

Note 1: Line 1, MALS-14, Serial Number XXXXXX.

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CHAPTER 3.2

Organizational Level Maintenance

3.2.1 General. This chapter discusses the maintenance actions assigned to organizational level maintenance activities which are performed in support of the day-to-day operation of the unit. Organizational level maintenance is performed by aviation ordnance technicians assigned to organizational maintenance activities. In the case crew-served guns the individual qualified Aircrew/Gunner may perform the tasks listed in paragraphs 3.2.2.1 through 3.2.2.4, 3.2.2.6 through 3.2.2.10, 3.2.2.14, and 3.2.2.16. Aviation Ordnance Technicians will assist and supervise the actions of the individual aircrew/gunner. Volume I chapter 2.3 of this manual describes the objectives and structure of these activities. Organizational level maintenance directly supports and maintains the aircraft weapon system, which consists of the aircraft, the gun or gun system, and the associated interface items.

3.2.2 Organizational Level Maintenance Responsibilities. Organizational level maintenance actions are tailored within the constraints of the organizational level's manpower and maintenance capabilities to ensure that the aircraft gun or gun system will perform its assigned mission. Figure 3-2-1 assigns the organizational level maintenance actions that are performed on the aircraft guns or gun systems listed in chapter 3.1. These assigned maintenance actions are described generally in paragraphs 3.2.2.1 through 3.2.2.17. All maintenance actions are to be performed in accordance with the approved Naval Air Systems Command Maintenance Instruction Manuals (MIM), loading manuals, and checklists which have been developed for each unique application of the aircraft gun or gun system.

3.2.2.1 Aircraft Preparation and Inspection. Prior to any loading evolution, the aircraft must be prepared and inspected in accordance with the procedures issued in the applicable airborne weapons and stores loading manual for each aircraft. Aircraft preparation and inspection is a step-by-step procedure which must be performed to complete a safe and reliable load. During preparation and inspection, organizational level maintenance personnel ensure that the aircraft is properly positioned and grounded, impulse cartridges are removed from all stores stations, and armament switches are moved to the off, safe, or normal positions.

3.2.2.2 Gun or Gun System Inspection. Qualified organizational level maintenance personnel inspect guns and gun systems for proper configuration, installation, and cleanliness as part of the daily aircraft inspection. Prior to loading a gun or gun system, applicable detailed inspection procedures are performed to ensure that the gun or gun system is acceptable for loading. Qualified organizational level maintenance personnel inspect ammunition magazine cans for distortion, cracks, or broken welds. Also inspected are loader assemblies and entrance and exit units for proper timing, and electrical, hydraulic, and pneumatic systems for proper connections and pressures. Detailed inspection procedures are called out in the applicable authorized MIMs and airborne weapons and stores loading manuals.

3.2.2.3 Gun or Gun System Preparation for Loading. After the gun or gun system inspection is completed, the gun or gun system preparation for loading procedures are performed. Preparation procedures vary depending on the gun system to be loaded and its application. The applicable airborne weapons and stores loading manuals provide preparation procedures for each gun or gun system.

3.2.2.4 Gun Loading. Organizational level aviation ordnance personnel receive ammunition from the supporting intermediate level maintenance organization in the proper configuration for use in the squadron's aircraft. The ammunition may be delivered prebelted in aircraft ammunition boxes, as would be the case for A-4 aircraft; in the linkless ammunition loading system transporter for the various M61A1 gun systems (F-14, F/A-18); preloaded in gun pods; or belted in ammunition boxes for loading directly into smaller caliber weapons. Ammunition is inspected and loaded in accordance with the applicable authorized aircraft weapons and stores loading manual.

3.2.2.5 Postloading Quality Assurance. After the gun or gun system loading evolution is complete, an ordnance certified quality assurance inspector shall conduct a postload inspection to ensure that a safe and reliable load has been accomplished. Inspection procedures are detailed in the appropriate weapons and stores loading manuals and include checks to ensure that all cockpit armament switches are in

Gun or Gun System	3.2.2.1 Aircraft Preparation/ Inspection	3.2.2.2 Gun/Gun System Inspection	3.2.2.3 Gun/Gun System Preparation	3.2.2.4 Gun Loading	3.2.2.5 Post-loading Quality Assurance	3.2.2.6 Arming	3.2.2.7 Dearming	3.2.2.8 Gun Down-loading
7.62mm M60 D	X ₁	X ₁	X ₁	X ₁	X	X _{1,2}	X _{1,2}	X ₁
7.62mm M240D	X ₁	X ₁	X ₁	X ₁	X	X _{1,2}	X _{1,2}	X ₁
7.62mm GAU-17/A (GAU-2B/A)	X ₁	X ₁	X ₁	X ₁	X	X _{1,2}	X _{1,2}	X ₁
Cal. 50 (XM-218) GAU-15/A GAU-16/A	X ₁	X ₁	X ₁	X ₁	X	X _{1,2}	X _{1,2}	X ₁
MK 12 20mm Gun	X				X	X	X	X
M197 20mm Gun	X	X	X	X	X	X	X	X
GPU-2/A Gun Pod	X	X	X	X	X	X	X	X
F-14/M61A1 20mm	X	X	X	X	X	X	X	X
F-18/M61A1/ M61A2 20mm	X	X	X	X	X	X	X	X
AV-8B/25mm GAU-12/U	X	X	X	X	X	X	X	X
Notes								
1. May be performed by qualified Aircrew/Gunner.								
2. Helicopter Crew-Served Guns are Normally armed, Dearthed, and have Jams Cleared in-flight.								

Figure 3-2-1. Organizational Level Maintenance Responsibilities for Guns and Gun Systems

Gun or Gun System	3.2.2.9 Gun Jam Clearing	3.2.2.10 Gun Removal/Installation	3.2.2.11 Discrepancy Reports	3.2.2.12 Bore-sighting	3.2.2.13 Unscheduled Maintenance	3.2.2.14 Scheduled Maintenance	3.2.2.15 Gun/Gun System Records	3.2.2.16 Lubrication and Cleaning	3.2.2.17 Technical Directives
7.62mm M60 D	X _{1,2}	X ₁	X	X	X	X ₁	X	X ₁	X
7.62mm M240D	X _{1,2}	X ₁	X	X	X	X ₁	X	X ₁	X
7.62mm GAU-17/A (GAU-2B/A)	X _{1,2}	X ₁	X		X	X ₁	X	X ₁	X
Cal. 50 (XM-218) GAU-15/A GAU-16/A	X _{1,2}	X ₁	X		X	X ₁	X	X ₁	X
MK 12 20mm Gun	X	X	X	X	X	X	X	X	X
M197 20mm Gun	X	X	X	X	X	X	X	X	X
GPU-2/A Gun Pod	X	X	X	X	X	X	X	X	X
F-14/M61A1 20mm	X	X	X	X	X	X	X	X	X
F-18/M61A1/M61A2 20mm	X	X	X	X	X	X	X	X	X
AV-8B 25mm GAU-12/U	X	X	X	X	X	X	X	X	X
Notes									
1. May be performed by qualified Aircrew/Gunner. 2. Helicopter Crew-Served Guns are Normally armed, Dearthed, and have Jams Cleared in-flight.									

Figure 3-2-1. Organizational Level Maintenance Responsibilities for Guns and Gun Systems (Cont'd)

the off, safe, or normal position, weapons loaded signs are in the cockpit, round counters are set (if applicable), access panels are closed, and all gun loading equipment is removed from the area.

3.2.2.6 Arming. Arming procedures transform a gun or gun system from a safe condition to the armed condition which enables gun or gun system operation. Arming is performed by qualified organizational level maintenance personnel in authorized arming areas. During arming operations, personnel make electrical, pneumatic, or mechanical connections or adjustments as required to transfer the gun or gun system from a safe to an armed condition. Specific gun or gun system arming procedures for each aircraft are called out in the applicable airborne weapons and stores loading manual. Helicopter door-mounted guns can be armed in flight.

3.2.2.7 Dearming. Gun dearming procedures transform a gun or gun system from the armed condition to a safe condition. Dearming procedures shall be performed prior to download and during turnaround evolutions. Qualified organizational level maintenance personnel shall perform dearming procedures in an authorized dearming area. Gun or gun system dearming procedures are contained in the applicable authorized airborne weapons and stores loading manual for each aircraft. Helicopter door-mounted guns can be dearmed in-flight.

3.2.2.8 Gun Downloading. Qualified organizational level maintenance personnel perform gun downloading actions in authorized downloading or rearming areas utilizing authorized handling and downloading equipment. Gun or gun system downloading procedures are contained in the applicable authorized airborne weapons and stores loading manual for each aircraft. At the completion of the downloading evolution, the ordnance supervisor will notify maintenance control as to the status of the aircraft.

3.2.2.9 Gun Jam Clearing. A gun jam occurs when ammunition is misfed into the gun system or when the gun system improperly handles the ammunition. Gun jam clearing shall be performed in the designated area by qualified organizational level maintenance personnel in accordance with the applicable authorized gun jam clearing checklist. Jams that occur in crew-served guns may be cleared in flight.

3.2.2.10 Gun or Gun System Removal and Installation. Guns or gun systems are removed from aircraft at the organizational level for maintenance, troubleshooting, disassembly, and authorized replacement of defective parts, components, and subassemblies of the gun or gun system in response to reported malfunctions or as part of the aircraft's

phased maintenance program. Procedures for gun or gun system removal and installation are incorporated in the applicable authorized MIM work packages. All personnel involved in aircraft gun maintenance must be familiar with the work packages, their contents, and the MIMs as a whole. When working on an aircraft or aircraft gun system, use of the appropriate MIM work package is mandatory.

3.2.2.11 Discrepancy Reports. Discrepancy reports are initiated at the organizational level when a discrepancy is discovered during the performance of any of the assigned organizational level maintenance actions. Discrepancy reporting procedures are contained in volume I, chapter 4.6 and OPNAVINST 5102.1C (NOTAL).

3.2.2.12 Boresighting. Boresighting of a forward firing gun or gun system requires the physical adjustment of the front and rear gun mounts to bring the gun barrel into alignment with the aircraft boresight datum line. The adjustment ensures that the gun will place the projectile on the target at a known range, usually 1,000 yards. Each aircraft gun system has a boresight kit consisting of the necessary hardware and attachments required to properly adjust the gun. The MIM for the aircraft contains instructions for boresighting. Organizational level maintenance aviation ordnance technicians boresight guns or gun systems whenever a gun or gun system is installed in an aircraft and as required as part of the aircraft's phased maintenance program.

3.2.2.13 Unscheduled Maintenance. Unscheduled maintenance consists of actions performed as a result of a failure, firing stoppage, misfire, or other malfunction of the gun or gun system. Unscheduled maintenance actions are performed to return the gun or gun system to an operational condition. Unscheduled maintenance actions include gun jam clearing, replacement of worn or broken parts, electrical repairs, and other repairs to the gun or gun system. Organizational level maintenance aviation ordnance technicians perform unscheduled maintenance to the depth permitted by the applicable authorized MIM.

3.2.2.14 Scheduled Maintenance. Scheduled maintenance is performed by qualified technicians utilizing approved applicable MIMs and Maintenance Requirement Cards (MRCs). MRCs are provided to facilitate a phased maintenance program for the gun or gun system in consonance with other scheduled aircraft maintenance requirements. Scheduled maintenance consists of servicing, preflight checks, in-flight checks, and postflight checks as well as calendar or other designated interval checks. Scheduled maintenance actions include inspection, servicing, lubrication, adjustment, and replacement of parts and components or minor assemblies as specified in the applicable authorized aircraft MIM. Typical scheduled

maintenance actions performed at the organizational level are described below:

a. Servicing consists of those functions required to upload and download guns or gun systems and ammunition.

b. Preflight checks consist of those functions necessary to ensure that the gun or gun system is ready for flight.

c. In-flight and maintenance functional checks will vary with each type of aircraft, i.e., fixed wing and rotary wing. Malfunctions may consist of clearing ammunition jams or minor adjustments and should be accomplished by qualified personnel. The correction of malfunctions will result in full mission capabilities and result in fewer mission aborts.

d. Postflight checks consist of those functions required to ensure that the gun or gun system is in a safe condition, including a visual inspection to ensure that the gun or gun system meets required standards for reload.

3.2.2.15 Gun or Gun System Records. Each gun or gun system has an accompanying document that serves as a complete history of the gun or system. See paragraph 3.1.6. The documents are used to record all maintenance actions performed on the gun or gun system at each maintenance level and also serve to record the rounds-fired count that determines the scheduled maintenance intervals. The records are maintained by the organizational maintenance activity that holds custody of the gun or gun system and are transferred with the gun or gun system.

3.2.2.16 Lubrication and Cleaning. The periodic lubrication and cleaning requirements for each particular gun or gun

system are outlined in the appropriate MIM or MRC. Cleaning and lubrication of guns or gun systems is a requirement after firing, as part of the scheduled maintenance of the system, and after unscheduled maintenance is completed.

3.2.2.17 Technical Directives. Organizational level aviation ordnance personnel are responsible for assuring compliance with notice of ammunition reclassifications (NARs) and all technical directives directed to that level.

3.2.3 Explosives Handling Personnel Qualification (Qual/Cert) Programs. Organizational level personnel involved with the maintenance of guns or gun systems whose duties include handling gun ammunition must be trained, qualified, and certified in accordance with the requirements of OPNAVINST 8020.14/MCO P8020.11 (NOTAL) or MCO 8023.3 (NOTAL) and appropriate type commander instructions.

3.2.4 Maintenance Training Requirements. Maintenance training is a continuous and ongoing process, conducted to ensure that personnel who operate, maintain, and support weapons systems and associated equipments are qualified to perform their respective functions. Formal and on-the-job maintenance training, for aircraft guns or gun systems processed at Organizational level maintenance activities, may be augmented through the use of Engineering Technical Specialists/Fleet Weapons Support Team provided by the Naval Air Warfare Center, Weapons Division, Point Mugu, CA. Volume I, chapter 4.4 provides procedures for requesting field service training and technical assistance. Volume I, section 6 provides additional information on all aspects of Naval Airborne Weapons Maintenance Training.

CHAPTER 3.3

Intermediate Level Maintenance

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CHAPTER 3.3

Intermediate Level Maintenance

3.3.1 General. This chapter describes the gun and gun system maintenance actions assigned to intermediate level maintenance activities. Intermediate level maintenance is authorized and designated to be performed by naval air stations, shipboard weapons departments, and marine aviation logistic squadrons at Marine Corps air stations. Intermediate maintenance activities perform intermediate maintenance functions on supported guns and gun systems as described in volume I chapter 2.3 of this manual. Naval Surface Warfare Center Division Crane, IN, performs specified maintenance functions on the M60 7.62mm, and M60D machine guns.

3.3.1.1 The intermediate level maintenance activity has the additional responsibilities of being the aircraft gun and gun system pool custodian.

3.3.2 Intermediate Level Maintenance Responsibilities. Intermediate maintenance activities perform higher level maintenance actions on guns or gun systems in support of the organizational level. The primary objective of intermediate maintenance is to issue to the organizational level a gun or gun system which is ready for installation. All maintenance actions are performed in accordance with applicable Commander Naval Air Systems Command authorized Maintenance Instruction Manuals (MIM) which have been developed for each gun and gun system. Guns or gun systems inducted into an intermediate level maintenance activity must be inspected immediately to ensure that all ammunition, ammunition components, or loose powder have been removed and that the gun or gun system is completely safe. The receiving intermediate level activity must also ensure that SRCs, AESRs, EORs are received with the gun or gun system are current and accurate. Figure 3-3-1 assigns the intermediate maintenance actions that are performed on the guns or gun systems listed in chapter 3.1. The assigned maintenance actions are described generally in paragraphs 3.3.2.1 through 3.3.2.8.

3.3.2.1 Scheduled Maintenance. Guns or gun systems shall be inducted into an intermediate level maintenance activity on schedules determined by usage of the gun or gun systems. Usage is based on the number of rounds fired by the gun. Intermediate level aviation ordnance personnel perform scheduled maintenance actions in accordance with applicable authorized MIMs for the gun or gun system.

Scheduled maintenance consists of inspection, disassembly, parts replacement, lubrication, assembly, and functional checks of components based on the round interval that is specified in the maintenance manuals. Guns and gun systems inducted for scheduled maintenance and found to be defective will be repaired by removal and replacement of defective assemblies or components as required to return the gun or gun system to ready-for-issue status. Guns and gun systems that have fired the allowed predetermined amounts of ammunition or are determined to be beyond capability of maintenance are returned to depot level for repair or overhaul.

3.3.2.2 Unscheduled Maintenance. Unscheduled maintenance at intermediate level maintenance is maintenance required as a result of a firing stoppage, component malfunction, misfire, or other condition that is beyond the maintenance capability of the organizational level that has custody of the gun or gun system. Intermediate level aviation ordnance personnel will repair defective guns by removal and replacement of defective assemblies and components to return the gun or gun system to ready-for-issue (RFI) status. Depending on the gun or gun system, these actions consist of complete disassembly, stripping, cleaning, lubrication, reassembly, gaging, and adjustment. Parts replacement during unscheduled maintenance does not change the round interval maintenance schedule for that gun or gun system.

3.3.2.3 Issue and Receipt. Intermediate level activities receive guns and gun systems and components for scheduled or unscheduled maintenance from the organizational level. The items are inducted into the intermediate level activity, inspected or repaired as required, and returned to the RFI Pool as ready-for-issue assets. If beyond the maintenance capability of the intermediate level activity, the item is sent to a depot level facility. When the organizational maintenance activity turns in a gun or gun system to an intermediate level maintenance activity, the organizational activity places a demand on the RFI Pool for a replacement gun or gun system. A ready-for-issue asset, if available, is issued to the organizational activity. If a ready-for-issue gun or gun system is not available, the organizational activity must wait until the intermediate level activity completes the required maintenance on the next available gun or gun system and returns it to a RFI status.

Gun or Gun System	3.3.2.1 Scheduled Maintenance	3.3.2.2 Un-scheduled Maintenance	3.3.2.3 Issue/Repair	3.3.2.4 Discrepancy Reports	3.3.2.5 Lubrication/Cleaning	3.3.2.6 Gun Jam Clearing	3.3.2.7 Gun System Records	3.3.2.8 Technical Directives
7.62mm M60 D	X	X	X	X	X		X	X
7.62mm M240D	X	X	X	X	X		X	X
7.62mm GAU-17/A (GAU-2B/A)	X	X	X	X	X		X	X
Cal. 50 (XM-218) GAU-15/A GAU-16/A	X	X	X	X	X		X	X
MK 12 20mm Gun	X	X	X	X	X	X	X	X
M197 20mm Gun	X	X	X	X	X		X	X
GPU-2/A Gun Pod	X	X	X	X	X	X	X	X
F-14/M61A1 20mm	X	X	X	X	X	X	X	X
F-18/M61A1/ M61A2 20mm	X	X	X	X	X	X	X	X
AV-8B/ A/A49E-10 25mm Gun	X	X	X	X	X	X	X	X

Figure 3-3-1. Intermediate Level Maintenance Responsibilities for Guns or Gun Systems

3.3.2.4 Discrepancy Reports. Discrepancy reports are initiated by intermediate level maintenance when a discrepancy is discovered during the performance of any of the assigned intermediate maintenance actions. Discrepancy reporting procedures are contained in volume I, chapter 4.6 and OPNAVINST 5102.1C.

3.3.2.5 Lubrication and Cleaning. Periodic lubrication and cleaning requirements for each gun or gun system are delineated in the applicable MIM or maintenance requirement card, and are an integral part of the scheduled maintenance program for that gun or gun system. Guns and gun systems inducted into an intermediate level maintenance activity for unscheduled maintenance will be cleaned and lubricated as specified in the applicable authorized MIM or maintenance requirement card prior to reissue.

3.3.2.6 Gun Jam Clearing. A gun jam occurs when ammunition is misfed into the gun or gun system or when the gun or gun system improperly handles the ammunition. When a gun has been inducted into an intermediate level activity is found to be jammed, clearing will be performed in accordance with the appropriate gun jam clearing checklist. The applicable authorized MIMs provide specific instructions for gun jam clearing.

3.3.2.7 Gun or Gun System Records. Each gun or gun system is accompanied by an SRC card or an AESR. The SRC or AESR for each gun or gun system inducted into an intermediate level maintenance activity will be screened for completeness and accuracy upon receipt of the gun or gun system. All maintenance actions performed on the gun or gun system, while in the custody of the intermediate level maintenance activity, will be entered into the applicable doc-

ument (SRC or AESR). The record shall be transferred with the gun or gun system when it is returned to the supply system or returned to the depot level for maintenance.

3.3.2.8 Technical Directives. Intermediate level aviation ordnance personnel are responsible for assuring compliance with technical directives such as notices of ammunition reclassification, airborne weapon bulletins, and airborne weapon changes.

3.3.3 Explosives Handling Personnel Qualification and Certification (Qual/Cert) Programs. Intermediate maintenance personnel involved with the maintenance of guns and gun systems, and whose duties include the handling of gun ammunition, must be trained, qualified, and certified in accordance with the requirements of OPNAVINST 8020.14/MCO P8020.11 (NOTAL) or MCO 8023.3 (NOTAL) and appropriate type commander instructions.

3.3.4 Maintenance Training Requirements. Maintenance training is a continuous and ongoing process, conducted to ensure that personnel who operate, maintain, and support weapons systems and associated equipments are qualified to perform their respective functions. Formal and on-the-job maintenance training, for aircraft guns or gun systems processed at Intermediate level maintenance activities, may be augmented through the use of Engineering Technical Specialists/Fleet Weapons Support Team provided by the Naval Air Warfare Center, Weapons Division, Point Mugu, Ca. Volume I, chapter 4.4 provides procedures for requesting field service training and technical assistance. Volume I, section 6 provides additional information on all aspects of Naval Airborne Weapons Maintenance Training.

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CHAPTER 3.4

Depot Level Maintenance

3.4.1 General. This chapter discusses the maintenance actions assigned to depot level maintenance activities. Depot activities perform maintenance on guns and gun systems and components that are beyond maintenance capability of lower maintenance level activities. Depot level activities support the organizational and intermediate levels by providing technical assistance through the use of more extensive facilities, skills, and materials. Depot level functions are carried out in industrial establishments or in the field by personnel from such establishments. Depot level industrial establishments may be government-owned and government-operated, government-owned and contractor-operated, or contractor-owned and contractor-operated.

3.4.2 Depot Level Maintenance Responsibilities. The activities assigned to perform depot level maintenance are shown in figure 3-4-1. Depot level maintenance responsibilities include:

- a. The maintenance or restoration of inherent design service levels of performance, reliability, and material condition.
- b. Designing or assisting in the design of modifications intended to improve design levels of performance, reliability, or material condition.
- c. The manufacture of items and component parts otherwise not available, when that action is deemed necessary and appropriately authorized.
- d. Providing support services and functions, including professional engineering and calibration services, and field teams to support organizational level or intermediate level maintenance when required and directed.

3.4.3 Depot Level Maintenance Actions. Depot level maintenance actions include, but are not limited to, the following: complete rebuild of guns, gun systems, or components through reclamation, refurbishment, overhaul, repair, replacement, adjustment, servicing, or replacement of consumables. Depot actions directly applicable to design modification include such things as alterations, conversions, engineering changes, modernizations, etc.

3.4.4 Gun or Gun System Records. Each gun or gun system is accompanied by a Scheduled Removal Component

(SRC) card or Aeronautical Equipment Service Record (AESR). The SRC or AESR for each gun or gun system inducted into a depot level activity will be screened for completeness and accuracy upon receipt of the gun or gun system. All maintenance actions performed on the gun or gun system while in the custody of the depot level maintenance activity will be entered into the applicable record (SRC or AESR) for that gun or gun system. The SRC or AESR shall be transferred with the matching gun or gun system when it is issued.

3.4.5 Technical Directives. Depot level maintenance personnel are not only responsible for assuring that technical directives, airborne weapon bulletins, airborne weapon changes, airborne armament changes, airborne armament bulletins, and notices of ammunition reclassification are complied with, but they also assist in the development and verification of technical directives that ultimately affect them. Assistance includes engineering change proposal review, development of the resulting technical directive, and verification prior to implementation of the technical directive.

3.4.6 Explosives Handling Personnel Qualification and Certification (Qual/Cert) Program. Depot level maintenance personnel involved with the maintenance of guns and gun systems, whose duties include handling of gun ammunition, must be trained, qualified, and certified in accordance with the requirements of OPNAVINST 8020.14/MCO P8020.11 (Department of the Navy Explosives Safety Policy) (NOTAL).

3.4.7 Maintenance Training Requirements. Maintenance training is a continuous and ongoing process, conducted to ensure that personnel who operate, maintain, and support weapon systems and associated equipments are qualified to perform their respective functions. Formal and on-the-job maintenance training, for aircraft guns or gun systems processed at industrial level maintenance activities, may be augmented through the use of Engineering Technical Specialists/Fleet Weapons Support Team provided by the Naval Air Warfare Center, Weapons Division, Point Mugu, Ca. Volume I, chapter 4.4 provides procedures for requesting field service training and technical assistance. Volume I, section 6 provides additional information on all aspects of Naval Airborne Weapons Maintenance Training.

	US Army Arsenal Anniston, AL	Naval Weapons Support Center Crane, IN	Hill AFB Ogden, UT	NAVAVN- DEPOT Jacksonville FL	TBD	NAVAVN- DEPOT Cherry Pt, NC
7.62-mm M60D		X				
7.62-mm GAU-2B/A, GAU-17	X					
7.62-mm M240D	X					
Cal .50 XM-218		X				
20-mm M197			X			
20-mm GPU-2/A			X			
20-mm A/A49E-7 (V4)			X			
20-mm M61A1/ M61A2			X			
25-mm GAU-12/U A/A49E-10						X
F/A-18 Gun Pallet A/A49-A-1				X		
M89E1			X			
A/A49E-13					X	
LALS					X	

Figure 3-4-1. Assignment of Depot Level Gun or Gun System Maintenance Responsibilities

SECTION 4

Unmanned Air Vehicles

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CHAPTER 4.1

Introduction

4.1.1 General. This section addresses maintenance program management of unmanned air vehicles. Maintenance program management, during a weapon system's life cycle deployment phase, is a critical management function to be performed due to the impact of maintenance requirements on the effective use of personnel, materials, facilities, and fiscal resources. Maintenance program management functions include maintenance planning, coordinating, budgeting, and evaluating program progress.

4.1.2 Responsibilities

4.1.2.1 The Assistant Commander for Logistics and Fleet Support (AIR-3.0), through the Logistics Management Division (AIR-3.1), is responsible for the program management and funding of unmanned air vehicle maintenance programs. The Naval Air Systems Command (COMNAVAIRSYSCOM) (AIR-3.1) is responsible for management, integrated logistics support, and maintenance engineering functions pertinent to unmanned air vehicles under COMNAVAIRSYSCOM cognizance.

4.1.2.2 Assistant Program Managers, Logistics (APML) within COMNAVAIRSYSCOM (AIR-3.1) plan and implement integrated logistics support and project support management activities for TALD and ITALD. The APML is directly responsible to the Program Executive Officer, Cruise Missile Project and Unmanned Aerial Vehicle Joint Project (PMA-208), for logistics aspects of acquisition programs from inception to deployment and eventual phaseout from active inventory. The TALD and ITALD APML is directly responsible to COMNAVAIRSYSCOM (AIR-3.1) for the overall planning and development of operationally effective and cost-effective support systems for the TALD and ITALD.

4.1.2.3 Volume I, chapter 2.2 defines maintenance functions and chapter 2.3 assigns maintenance responsibilities that apply to unmanned air vehicles. Chapters 4.2, 4.3, and 4.4 describe organizational, intermediate, and depot level maintenance actions that apply to unmanned air vehicles.

4.1.3 Scope. Unmanned air vehicles are the latest addition to the fleet inventory. These vehicles provide operating forces with increased capability in the areas of reconnaissance, surveillance, and electronic counter-countermeasures. These highly versatile vehicles may be self-powered and recoverable as is the Pioneer short-range remotely piloted vehicle, nonpowered and nonrecoverable like the Tactical Air Launched Decoy (TALD), or powered and nonrecoverable like the Improved Tactical Air Launched Decoy (ITALD). The maintenance of unmanned air vehicles involves both the Naval Aviation Maintenance Program (OPNAVINST 4790.2H) (NOTAL) and this instruction. Maintenance program assignments are predicated on the individual unmanned air vehicle's system maintenance requirements and its end use.

4.1.3.1 Remotely Piloted Vehicles. Maintenance and maintenance data reporting requirements of recoverable remotely piloted vehicles used for reconnaissance and surveillance are consistent with those of OPNAVINST 4790.2H (NOTAL) and are covered by that instruction.

4.1.3.2 Nonrecoverable Decoys. Maintenance and maintenance data reporting requirements for unmanned air vehicles used as nonrecoverable decoys is covered by this instruction.

4.1.4 Applicability. This section is applicable to the TALD and ITALD. The TALD is an air launched, preprogrammed, unpowered, glide chaff, RF passive, or RF active vehicle used to deceive and saturate enemy integrated air defenses during strike aircraft operations. The three TALD configurations include, the A/B37U-1 (V1) chaff vehicle, A/B37U-1 (V2) radar passive vehicle and the ADM-141A radaractive vehicle. While fit, form and function remain the same within version, manufacturing differences have produced variants. The ITALD is an air launched, preprogrammed, powered RF active vehicle used to deceive and saturate enemy integrated air defenses during strike aircraft operations. It is a Preplanned Product Improvement towhead that adds turbojet propulsion and low-level navigation capability to the TALD. Its official designation is ADM-141C. All four versions are compatible with and can be launched from the A/A37B-6E Multiple Ejector Rack (MER), A/A37B-5E Triple Ejector Rack (TER) or a BRU-42 Improved Triple Ejector Rack (ITER). All versions are approximately 92 inches long with a nominal 10 inches include width and height. The chaff vehicle weighs approximately

380 pounds, while all RF passive and active versions weight approximately 400 pounds. A computer within each vehicle is preprogrammed with flight profile data prior to loading. It provides flight management and controls of the vehicle through a series of planned maneuvers after launch. The ITALD has enhanced terrain tracking capability and an extended flight envelope for expanded missions. Figure 4-1-1 depicts aircraft application and configuration data for the TALD and ITALD.

4.1.5 TALD and ITALD Maintenance Concepts. The Navy employs three levels of maintenance for the TALD and ITALD. Organizational Level (ashore and afloat) upload and download the vehicle to or from the aircraft electrical and mechanical launch interfaces, conduct visual inspections, and perform retesting and reprogramming of the flight profile using the TTU-473/E Decoy Tester-Programmer, if operational commitments dictate. The Intermediate Level removes or returns the decoy from or to the reusable shipping container, assembles or disassembles stabilizers and fins, replaces selected structural components, utilizes the TTU-473/E Decoy Tester-Programmer to conduct a GO/NO GO test or inspection at Intermediate Level will be returned to depot for repair. The decoy will fault isolate to a failed WRA utilizing the TTU-480/E Integrated System Tester. Failed WRAs will be replaced in lieu of repair and the decoy returned to Ready for Issue status. There are three reusable storage containers for the TALD. Two complete TALDs, including stabilizer assemblies (vertical and horizontal), ventral fin, lanyard bridle and electrical adapter cable assembly for each vehicle, are stored in a CNU-491/E or CNU-436/E container, the lanyard bridle and electrical adapter cable assembly for each vehicle is TYCOM-controlled/issued. Two complete ITALD decoys, including stabilizer assemblies (vertical and horizontal), ventral fin, lanyard bridle and electrical adapter cable assembly for each vehicle, are stored in a CNU-536A/E reusable shipping container.

4.1.6 All-Up-Round Maintenance Concept. The all-up-round maintenance concept is a maintenance methodology designed to accommodate the processing of the TALD or ITALD throughout the logistics cycle. The objective of the all-up-round maintenance concept, as it applies to the TALD or ITALD, is to issue a packaged, nearly complete assembled round to permit rapid usage by the fleet.

4.1.7 Deep Stowage Concept. Deep stowage is a means of protecting the TALD or ITALD. The objective of deep stowage is to maintain assets in their highest state of readiness until needed to support operational requirements. Deep stowage describes assets when they are stored in a protected (temperature and humidity controlled) environment. Assets stored under these conditions normally remain in their shipping containers. Deep stowed assets are protected from degradation caused by day-to-day exposure to the environment, thereby providing the highest confidence level that they will accomplish their intended mission. Assets that have been stored in spaces which meet the criterion described below are considered to be deep stowed.

4.1.7.1 Deep Stowage (Afloat). TALDs or ITALDs are classified as deep stowed as long as they remain in their shipping containers and are stored below deck in magazine spaces which are in accordance with NAVSEA OP 4 (Ammunition Afloat).

4.1.7.2 Deep Stowage (Ashore). TALDs or ITALDs are classified as deep stowed as long as they remain in their shipping containers and are stored in a protected environment in magazines which are in accordance with NAVSEA OP 5 (Ammunition Ashore).

4.1.8 Contractor Maintenance Support. All vehicles are subject to a 3 year warranty for workmanship. Refer to paragraph 4.3.3 for warranty actions.

	Parent Rack	Aircraft Application	Accessory Suspension Equipment	Loading Manual	Technical Manual Organizational/ Intermediate Level Maintenance
Tactical Air Launched Decoy Improved Tactical Air Launched Decoy	Aero 7A Aero 7B	A-6E	A/A37B-6E (MER) A/A37B-5E (TER) BRU-42 (ITER)	NAVAIR 01-85AD-75, Airborne Weapons/ Stores Loading Manual, A-6 Series, EA-6, and KA-6 Aircraft	NAVAIR 11-140-6.1 Weapons Assembly Manual
Tactical Air Launched Decoy Improved Tactical Air Launched Decoy	BRU-32/A	F/A-18	BRU-42 (ITER)	NAVAIR A1-F18AC-LWS, F/A-18A and TF/A-18A Aircraft, Weapons/Stores Loading Manual	NAVAIR 11-140-6.1 Weapons Assembly Manual
Tactical Air Launched Decoy Improved Tactical Air Launched Decoy	BRU-11A/A	S-3	A/A37B-5E (TER) BRU-42 (1TER)	NAVAIR 01-S3AAA-75, Airborne Weapons/ Stores Loading Manual S-3A Aircraft	NAVAIR 11-140-6.1 Weapons Assembly Manual

Figure 4-1-1. Aircraft Application and Configuration Data for the Tactical Air Launched Decoy Improved Tactical Air Launched Decoy

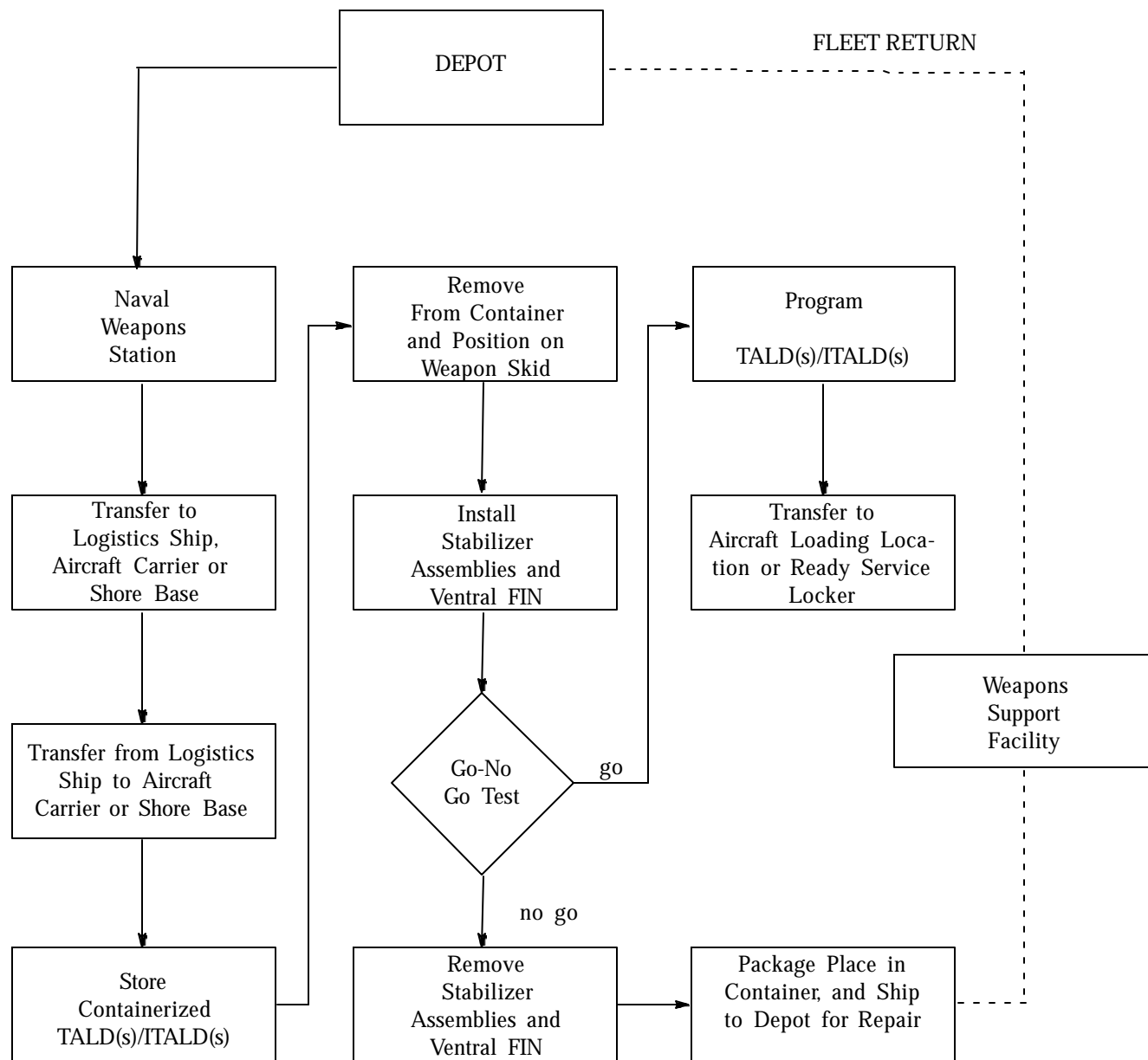


Figure 4-1-2. TALD and ITALD Maintenance Pipeline

CHAPTER 4.2

Organizational Level Maintenance

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CHAPTER 4.2

Organizational Level Maintenance

4.2.1 General. This chapter discusses the maintenance actions assigned to the organizational level which are performed in support of the day-to-day operation of the unit. Organizational level maintenance is performed by aviation ordnance technicians assigned to organizational maintenance activities. Volume I chapter 2.3 of this instruction describes the objectives and structure of these activities. Organizational level maintenance directly supports and maintains the aircraft weapon system, which consists of the aircraft, the Tactical Air Launched Decoy (TALD), Improved Tactical Air Launched Decoy (ITALD), and the associated interface items.

4.2.2 Organizational Level Maintenance Responsibilities. Under the all-up-round maintenance concept, organizational level maintenance actions are tailored within the constraints of the organizational level's manpower and maintenance capabilities to ensure that the TALD and ITALD will perform its assigned end mission. Assigned maintenance actions that are performed on the TALD are described generally in paragraphs 4.2.2.1 through 4.2.2.13. All maintenance actions are to be performed in accordance with the applicable Aircraft Airborne Weapons/Stores Loading Manual.

4.2.2.1 Release and Control System Check. Organizational level aviation ordnance technicians (Marine) and/or Integrated Weapons Team (IWT) (Navy) members perform release and control checks to functionally test the aircraft electrical, mechanical, or control subsystem. Checks must be performed prior to TALD or ITALD loading, after configuration of the aircraft where connections have been mated and remated, and after any malfunction in the release and control system. For specific procedures, consult the applicable airborne weapons and stores loading manual.

4.2.2.2 Aircraft Preparation and Inspection. Aircraft preparation and inspection is a step-by-step procedure which must be performed to complete a safe and reliable load. During preparation and inspection, organizational level ordnance personnel ensure that the aircraft is properly posi-

tioned and grounded. Impulse cartridges are removed from all TALD or ITALD stations and armament switches are moved to the off, safe, or normal positions. Discrepancies must be corrected before the loading evolution can proceed. Individual aircraft procedures are specified in the applicable aircraft airborne weapons and stores loading manual.

4.2.2.3 TALD Receipt and Inspection. Organizational level ordnance personnel inspect each TALD prior to loading to ensure proper integrity. Organizational level ordnance personnel check the nose cone for cracks, dents, scratches, punctures, gouges, and the fuselage for cracks, dents, punctures, or missing parts. Stabilizers and ventral fins are checked for damage, proper alignment, and installation. Organizational level ordnance personnel assure that the TALD or ITALD is properly configured for its mission, that the aircraft attachment hardware is present and undamaged (lanyard bridle and electrical adapter cable assembly), and that all safety devices are present and properly installed. Decoys which do not meet the inspection criteria described in figure 4-2-1 will be rejected and returned to the supporting intermediate level weapons department.

4.2.2.4 TALD or ITALD Preparation for Loading. After receiving the TALD or ITALD and ensuring proper operational configuration, it is prepared for loading. Preparation consists of ensuring that MER, TER, IMER, or ITER rack sway braces have been properly installed and adjusted in accordance with loading manual requirements, verifying that aircraft and TALD/ITALD inspections have been completed. Assure that the aircraft is properly grounded, aircraft power has been removed, and that armament switches are positioned in the off, safe, or normal position as specified by the applicable airborne weapons and stores loading manual.

4.2.2.5 Aircraft Station Preparation. Organizational level ordnance personnel prepare each aircraft station that will be loaded. Preparation consists of installing and readying the bomb rack to receive the TALD or ITALD. Refer to the applicable airborne weapons and stores loading manual for aircraft station preparation procedures.

Subsystem Equipment	Cause for Rejection								
	Dents 1/2 inch	Cracks	Fractures	Punctures	Scratches	Gouges 1/2 inch	Missing Parts	Bent or Corroded Pins	Fuel Leaks
Nose cone	X	X	X	X		X	X		X
Fuselage	X	X	X	X		X	X		X
Wings	X	X	X	X	X	X	X		
Stabilizer Assembly Modules	X	X	X	X	X	X	X		
Lanyard Bridle		X	X				X		
Electrical Adapter Cable Assembly		X	X	X		X	X	X	X
Electrical Connectors	X	X	X	X	X	X	X	X	X
Definitions: S Dent. Any surface depression that changes surface continuity, but does not involve removal of metal/paint or penetration of the surface. S Crack. Any narrow break or tear of material in which material is neither displaced as a dent nor removed by a gouge. S Fracture. A complete break in the material surface. S Puncture. A penetration through the surface of marterial. S Scratch. A minor surface degradation involving minor removal of paint or minor marking of an unpainted surface. S Gouge. A major surface degradation involving the removal of metal from unpainted surface or removal of paint. S Fuel Leaks. . . . An indication of fuel leaking or residue (blue color) primarily on the propulsion module or lower fuselage area.									

Figure 4-2-1. TALD and ITALD Inspection Criteria

4.2.2.6 TALD or ITALD Loading. During loading, organizational level ordnance personnel load TALDs or ITALDs on or into an aircraft. Loading evolutions are performed within a designated loading and downloading area in accordance with the airborne weapons and stores loading checklist. Refer to the applicable aircraft airborne weapons and stores loading manual for specific loading procedural requirements.

4.2.2.7 Postload Quality Assurance Inspection. A certified quality assurance inspector performs an inspection of the TALDs or ITALDs and the aircraft interface after the loading operation has been completed. The inspection ensures that TALDs or ITALDs have been loaded properly and that all procedural steps have been correctly performed. In conducting postloading quality assurance checks on stations loaded with the TALD, or ITALD, organizational level ordnance personnel verify that all armament switches have been moved to the off, safe, or normal positions, the weapon loaded sign is in the cockpit, sway braces have been properly adjusted, and all electrical connections are properly attached.

4.2.2.8 Arming. Arming is an operation whereby a TALD or ITALD is changed from a safe condition to an armed condition. During arming operations, organizational level ordnance personnel remove bomb rack safety pins and TALD or ITALD electrical safing pins.

4.2.2.9 Postoperational Inspection. Organizational level ordnance personnel perform a postoperational inspection in the dearming area to ensure that TALD or ITALD system components are not damaged, loose, or broken. In the event of an unsuccessful launch attempt, visual checks are conducted for evidence as to the cause of the malfunction.

4.2.2.10 Dearming. Dearming is performed to change the TALD or ITALD from an armed condition for initiation to a safe condition. All arming and dearming must be conducted in an authorized arming and dearming area. During dearming operations, organizational level ordnance personnel replace bomb rack safety pins and TALD or ITALD electrical safing pins

4.2.2.11 TALD or ITALD Downloading. Downloading is the process of removing unexpended TALDs from the aircraft. It is performed within the loading and downloading area and is conducted in accordance with applicable loading checklists. If operational commitments dictate, the TALD or ITALD may be retested and reprogrammed on the aircraft for a turn around launch.

4.2.2.12 Discrepancy Reporting. Discrepancy reports are initiated at the organizational level when a discrepancy is discovered during the performance of any of the assigned organizational level maintenance actions. Discrepancy reporting procedures are contained in volume I, chapter 4.6.

4.2.2.13 Technical Directives. Organizational level ordnance personnel are responsible for assuring that TALD and ITALD airborne weapon bulletins and airborne weapon changes directed to that level are complied with.

4.2.3 Explosives Handling Personnel Qualification and Certification (Qual/Cert) Program. Organizational level personnel involved with the maintenance of TALDs or ITALDs must be trained, qualified, and certified to perform these maintenance actions in accordance with the requirements of OPNAVINST 8020.14/MCO P8020.11 (NOTAL) or MCO 8023.3 (NOTAL) and applicable type commander instructions.

4.2.4 Maintenance Training Requirements. Maintenance training is a continuous and ongoing process, conducted to ensure that personnel who operate, maintain, and support weapons systems and associated equipments are qualified to perform their respective functions. Formal and on-the-job maintenance training, for unmaned air vehicles processed at Organizational level maintenance activities, may be augmented through the use of Engineering Technical Specialists/ Fleet Weapons Support Team provided by the Naval Air Warfare Center, Weapons Division, Point Mugu, CA. volume I, chapter 4.4 provides procedures for requesting field service training and technical assistance. Volume I, section 6 provides additional information on all aspects of Naval Airborne Weapons Maintenance Training.

CHAPTER 4.3

Intermediate Level Maintenance

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CHAPTER 4.3

Intermediate Level Maintenance

4.3.1 General. This chapter describes the maintenance actions assigned to intermediate level maintenance activities. Intermediate level maintenance is authorized and designated to be performed by naval air stations, shipboard weapons departments, and Marine aviation logistics squadrons as described in volume I, chapter 2.3 of this manual.

4.3.2 Intermediate Level Maintenance Responsibilities. Under the all-up-round maintenance concept, intermediate level maintenance activities designated in volume I, chapter 2.3 perform higher level maintenance actions on Tactical Air Launched Decoys (TALD) and Improved Tactical Air Launched Decoy (ITALD) in support of the organizational level. The primary objective of intermediate level maintenance is to issue to the organizational level a TALD or ITALD which requires minimal maintenance actions to be performed at that level, allowing expedient preparation and loading of the vehicle. Assigned maintenance actions are described generally in paragraphs 4.3.2.1 through 4.3.2.15. All maintenance actions are to be performed in accordance with NAVAIR 01-140-6.1 Weapons Assembly Manual which has been developed for TALD and ITALD.

4.3.2.1 Removal from Storage. Upon receipt of a mission requirement, intermediate level weapons department personnel remove the required number of containerized TALDs or ITALDs using an electric forklift and/or a MK 45 handlift truck to transfer the TALD or ITALD in containers. A weapon skid (AERO-21A), two skid adapters (AERO-58A) (lower), four skid adapter assemblies (ADU-483/E), and a transport adapter (part number ADK-598-U32K-1) are required to provide a mobile platform on which to install stabilizer assembly modules, perform a GO/NO GO test, to program or verify flight profiles, and to transport a TALD or ITALD to awaiting aircraft.

4.3.2.2 Container Inspection. Intermediate level weapons department personnel perform a visual inspection of the TALD or ITALD container exterior in the bomb assembly area to determine if damage has occurred during shipment and handling (i.e., cracks, dents, punctures, corrosion, missing pieces, etc.). Weapons department personnel assess damage for severity and potential decoy damage. Container damage which seriously degrades its protective capability and places suspicion on the integrity of the TALD or ITALD to perform its intended mission will be returned to the depot

for repair. TALD or ITALD container damage that is not serious will be noted as defective and utilized until the TALD or ITALD is returned for maintenance.

4.3.2.3 Unpackaging. Intermediate level weapons department personnel unpackage the TALD or ITALD in the bomb assembly area. The unpackaging task consists of removing the TALDs or ITALDs (shipped two to a container) from the CNU-436/E, CNU-456/E, CNU-491/E, CNU-536/E, or CNU-536A/E reusable shipping container. During the unpackaging evolution, all protective shipping devices (i.e., clips, straps, dust covers, tie-downs, protective dunnage, etc.) are removed from the TALD or ITALD vehicle, its stabilizer assemblies, and ventral fin. Container dunnage and shipping devices are retained in the shipping container for later use. Visual inspection of the TALD or ITALD is performed to determine if damage has occurred to the items during shipping and handling as described in volume II, chapter 4.2, figure 4-2-1. The inspection is carried out in accordance with NAVAIR 11-140-6.1. Damaged assemblies or fins are replaced and discarded.

4.3.2.4 Receipt Inspection. Visual inspection of the TALD or ITALD, the stabilizer assemblies, and the ventral fins is performed to determine if damage has occurred to the items during shipping and handling. Damaged stabilizers and fins are replaceable at the Intermediate level. However, physical damage to the TALD or ITALD vehicle, or evidence of a fuel leak in an ITALD vehicle is cause for repacking and return to depot for repair.

4.3.2.5 Assembly. Intermediate level weapons department personnel complete the assembly of the TALD or ITALD by interconnecting the horizontal and the vertical power cables to the decoy and installing the stabilizers and ventral fin on the TALD or ITALD.

4.3.2.6 Testing and Programming. GO/NO GO testing, flight profile programming, and flight profile programming verification of the TALD or ITALD are performed by intermediate level weapons department personnel utilizing the TTU-473/E decoy tester-programmer in accordance with the procedures delineated in NAVAIR 11-140-6.1 (NOTAL). Flight test profile programming and verification of the TALD or ITALD is normally accomplished prior to delivery to the organizational unit. If operational commitment

dictates, the TALD or ITALD may be tested and programmed on the aircraft.

4.3.2.7 Decoy Tester-Programmer Maintenance. Intermediate level weapons department personnel perform upkeep maintenance actions on the TTU-473/E tester-programmer. Upkeep maintenance actions (self-test, battery charging, battery replacement, etc.) are performed in accordance with NAVAIR 11-140-6.1 (NOTAL).

4.3.2.8 Cleaning. Cleaning consists of the removal of contaminants such as dirt, salt spray, oil, and other elements that induce or aid corrosion. As a general rule, the mildest cleaning method available that will work effectively is used. All cleaning actions will be performed in accordance with technical manual, NAVAIR 11-140-6.1.

4.3.2.9 Ready Service Inspection. A ready service inspection is an inspection of a TALD or ITALD that has been removed from its container and placed in a ready service magazine prior to issue to the organizational unit. The inspection is performed by intermediate level weapons department personnel on the TALD or ITALD. A ready service inspection consists of inspecting the all-up-round TALD or ITALD for proper configuration, damage, loose or missing components, corrosion, or other conditions that render the TALD or ITALD unsafe or hazardous. An all-up-round TALD or ITALD that is determined to be not ready-for-issue is containerized and shipped to the depot repair facility.

4.3.2.10 Packaging. Intermediate level weapons department personnel repackage all TALDs or ITALDs which have been decontainerized but are not ready for issue and return them to the depot level facility. During packaging, the TALD or ITALD is returned to the shipping container along with all protective shipping devices (i.e., clips, straps, dust covers, tie-downs, protective dunnage, etc.). All packaging operations are conducted in the bomb assembly area in accordance with the applicable technical manual.

4.3.2.11 Discrepancy Reporting. Discrepancy reports are initiated by the weapons department when a discrepancy is discovered during the performance of any of the assigned intermediate level maintenance actions. Discrepancy reporting procedures are contained in volume I, chapter 4.6.

4.3.2.12 Requisitioning. Intermediate level weapons departments are responsible for the requisition of TALDs or ITALDs in accordance with established allowances. The military standard requisition and issue procedures are used for ordering all nonnuclear ordnance. Submit requisitions as provided in the current edition of NAVSUP P-724 (NOTAL). All requisitions not filled from in-theater (fleet) as-

sets are sent to the Navy Inventory Control Point utilizing routing identifier "NCB" with an information copy to the Naval Air Systems Command (COMNAVAIRSYSCOM) (AIR-3.0) for all other conventional ammunition. Requisitions of TALDs or ITALDs for allowance replenishment, scheduled training, or deployment loadout must be submitted by naval message or autodine network to NAVAMMOLOGCEN (NALC) not earlier than 90 days but not less than 60 days before the required delivery date. Carriers loading via a cargo ship must use the date when the cargo ship will commence onload, not the underway replenishment date. The required delivery date should be updated via military standard requisition and issue procedures modifier as changes occur.

4.3.2.13 Shipping. Prior to shipment, TALDs or ITALDs and their associated hardware which have been decontainerized are returned to their containers and repackaged in accordance with the applicable technical manual. Containers are sealed, marked, and tagged and appropriate Conventional Ammunition Integrated Management System entries are reported.

4.3.2.14 Technical Directives. Weapons department personnel are responsible for assuring that technical directives such as airborne weapon bulletins and airborne weapon changes directed to that level are complied with.

4.3.2.15 Record Keeping and Reporting. Weapons departments are responsible for TALD or ITALD record keeping and reporting for both organizational level maintenance and intermediate level maintenance. Maintenance Data Forms may be required.

4.3.3 Warranty Actions

4.3.3.1 The COMNAVAIRSYSCOM Warranty Program is discussed in detail in volume I, chapter 4.3 and is applicable to TALD or ITALD. In the event that a deficiency is discovered during intermediate level maintenance processing of new or newly reworked material or material that is still under warranty, and that deficiency is not a result of maintenance handling or processing, the item shall be considered to be in breach of warranty provisions of the contract and is therefore subject to the remedy provisions of the warranty.

4.3.3.2 A Quality Deficiency Report Form Standard Form (SF 368) will be used to process warranty claim actions. The SF 368 will be clearly marked "Warranty Claim Action" and will include the following:

- a. Date of failure.
- b. Warranty expiration date.

- c. Production contract number.
- d. Item serial number.
- e. Detailed circumstances leading to discovery of the failure.

4.3.3.3 In addition to normal distribution, a copy of the completed Quality Deficiency Report will be placed in the container with the failed item and the item will be returned to the vendor for repair under the warranty provisions of the contract. A copy of the Quality Deficiency Report will also be sent to the cognizant COMNAVAIRSYSCOM Assistant Program Manager, Logistics (AIR-3.1.3.1) responsible for that item.

4.3.4 Explosives Handling Personnel Qualification and Certification (Qual/Cert) Program. Weapons department personnel involved with the maintenance of TALDs or ITALDs must be trained, qualified, and certified to perform

these maintenance actions in accordance with the requirements of OPNAVINST 8020.14/MCO P8020.11 (NOTAL) or MCO 8023.3 (NOTAL) and applicable type commander instructions.

4.3.5 Maintenance Training Requirements. Maintenance training is a continuous and ongoing process, conducted to ensure that personnel who operate, maintain, and support weapons systems and associated equipments are qualified to perform their respective functions. Formal and on-the-job maintenance training, for unmanned air vehicles processed at intermediate level maintenance activities, may be augmented through the use of Engineering Technical Specialists/Fleet Weapons Support Team provided by the Naval Air Warfare Center, Weapons Division, Volume I, chapter 4.4 provides procedures for requesting field service training and technical assistance. Volume I, section 6 provides additional information on all aspects of Naval Airborne Weapons Maintenance Training.

CHAPTER 4.4

Depot Level Maintenance

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CHAPTER 4.4

Depot Level Maintenance

4.4.1 General. This chapter discusses the maintenance actions assigned to depot level maintenance activities. Under the all-up-round maintenance concept, depot activities perform maintenance on Tactical Air Launched Decoys (TALD) or Improved Tactical Air Launched Decoy (ITALD) that are beyond the maintenance capability of intermediate level activities. Depot level activities support the organizational and intermediate levels by providing technical assistance in carrying out those functions which are beyond their responsibility or capability through the use of more extensive facilities, skills, and materials. Depot level functions are carried out in industrial establishments or in the field by personnel from such establishments. Depot level industrial establishments may be government-owned and government-operated, government-owned and contractor-operated, or contractor-owned and contractor-operated.

4.4.2 Assignment of Depot Level Responsibilities. Naval Weapons Station Yorktown, VA is the designated depot repair facility for the TALD, ITALD, and ancillary equipment, including the TTU-473/E Decoy Tester-Programmer and TTU-480/E Integrated System Tester.

4.4.3 Depot Level Maintenance Actions. Maintenance actions assigned to the depot are:

- a. All maintenance and modification actions necessary for the rework and repair of TALDs or ITALD under their cognizance.
- b. Manufacture of items and component parts otherwise not available when that action is deemed necessary and is appropriately authorized.
- c. Provide support service functions, including professional engineering, technology, calibration services, and field teams to support organizational level or intermediate level maintenance when required and directed.

4.4.4 Depot Level Maintenance Responsibilities

4.4.4.1 Depot level maintenance responsibilities include those actions required to maintain or restore the inherent

design service levels of performance, reliability, and material condition; they span complete rebuild through reclamation, refurbishment, overhaul, repair, replacement, adjustment, servicing, and replacement of consumables. They also include inspection, calibration, and testing.

4.4.4.2 Depot level maintenance is also responsible for all modification actions required to change or improve design levels of performance, reliability, and material. The term modification, as used in this instruction, includes alteration, conversion, engineering change, modernization, etc.

4.4.5 Depot Maintenance Processing. All depot maintenance actions are performed in accordance with the applicable authorized Naval Air Systems Command instructions.

4.4.6 Technical Directives. Depot level maintenance personnel are responsible for assuring that technical directives, airborne weapon bulletins, and airborne weapon changes are complied with. In addition, they also assist in the development and verification of technical directives that ultimately affect them. This assistance includes engineering change proposal review, development of the resulting technical directive, and verification prior to implementation of the technical directive.

4.4.7 Record Keeping and Reporting

4.4.7.1 Depot level maintenance activities are responsible for all record keeping and reporting actions related to TALD or ITALD processing. This includes Conventional Ammunition Integrated Management System (CAIMS) reporting requirements, local applicable directives, and maintenance data system reporting. The maintenance data system and CAIMS are described in volume I, section 5. Maintenance Data Forms may be required.

4.4.7.2 Reporting to the CAIMS for TALD or ITALD is via transaction item reporting, ammunition transaction reports, and the Serialized Lot Item Tracking system, while commercial contractors report via naval message format whenever there is any change in the status or configuration of a TALD or ITALD.

SECTION 5

Targets

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CHAPTER 5.1

Introduction

5.1.1 General. This section addresses maintenance program management of targets. Maintenance program management is a critical management function to be performed during a target system's deployment life cycle phase due to the impact of maintenance requirements on the effective use of personnel, materials, facilities, and fiscal resources. Maintenance program management functions include maintenance planning, coordinating, budgeting, and evaluating program progress. Aerial and land targets are under the technical cognizance of the Naval Air Systems Command (COMNAVAIRSYSCOM).

5.1.2 Responsibilities

5.1.2.1 The Assistant Commander for Logistics and Fleet Support (AIR-3.0), through the Logistics Management Division (AIR-3.1), is responsible for the program management and funding of target system maintenance programs. COMNAVAIRSYSCOM (AIR-3.1) is responsible for management, integrated logistics support, and maintenance engineering functions pertinent to target systems under COMNAVAIRSYSCOM cognizance.

5.1.2.2 Assistant Program Managers, Logistics (APML) within COMNAVAIRSYSCOM (AIR-3.1) plan and implement integrated logistics support and project support management activities for target systems. Commodity Logistics Engineers (CLEs) have been designated at the Naval Air Warfare Center Weapons Division (NAVAIRWAR-CENWPNDIV), for all target systems, except full scale aerial targets, to provide life cycle logistics management support to the COMNAVAIRSYSCOM APML. The field activity CLEs are responsible to the COMNAVAIRSYSCOM (AIR-3.1) APML for implementation of the approved logistics program. The COMNAVAIRSYSCOM (AIR-3.1) APML is directly responsible to the target systems Program Executive Officer Unmanned Aerial Joint Project, Navy Program Manager Aerial Targets for the logistics aspects of acquisition programs from inception through deployment and eventual phase out from the active inventory. The COMNAVAIRSYSCOM (AIR-3.1) APML is directly responsible to the Director AIR-3.1 for the effective planning and development of operationally effective and cost-effective support systems for acquisition programs.

5.1.2.3 Volume I, chapter 2.2 defines maintenance functions and volume I, chapter 2.3 assigns maintenance responsibilities that apply to targets. Chapters 5.2, 5.3, and 5.4

describe organizational, intermediate, and depot level maintenance actions that apply to targets. Chapter 5.5 provides instructions and samples for completing the required forms to document specific maintenance tasks.

5.1.3 Applicability

5.1.3.1 This section applies to targets and presents a compilation of target data enabling the weapons system community to select a target which closely simulates enemy threats. Target selection must be carefully made to test the effectiveness of a particular weapon system. Emphasis is placed on selecting suitable targets for weapons evaluation and fleet training as weapons become more specialized and their performance evaluation more complex.

5.1.3.2 This section describes target performances and identifies which targets are used for fleet training. Figure 5-1-1 depicts Standard Organization (Limited Intermediate) Level Target Maintenance Department. Figure 5-1-2 is the Assignment of Target Maintenance Levels by Maintenance Activity. Figure 5-1-3 identifies the policy document governing target maintenance and deficiency reporting.

5.1.3.3 Target systems are divided into three categories: aerial targets, land targets, and tow target systems. Within each category there are different types of targets as described below:

a. Aerial Targets

(1) Subscale. A subscale target is one whose apparent physical characteristics may be changed through the use of augmentation devices to represent a wide range of threats. Subscale targets are pilotless, remotely controlled vehicles.

(2) Fullscale. A fullscale target closely approximates selected enemy threats such as converted aircraft targets and VANDAL missile targets.

b. Land Targets

c. Tow Target Systems

(1) Aerial tow reeling machine and launchers.

(2) Aerial tow target.

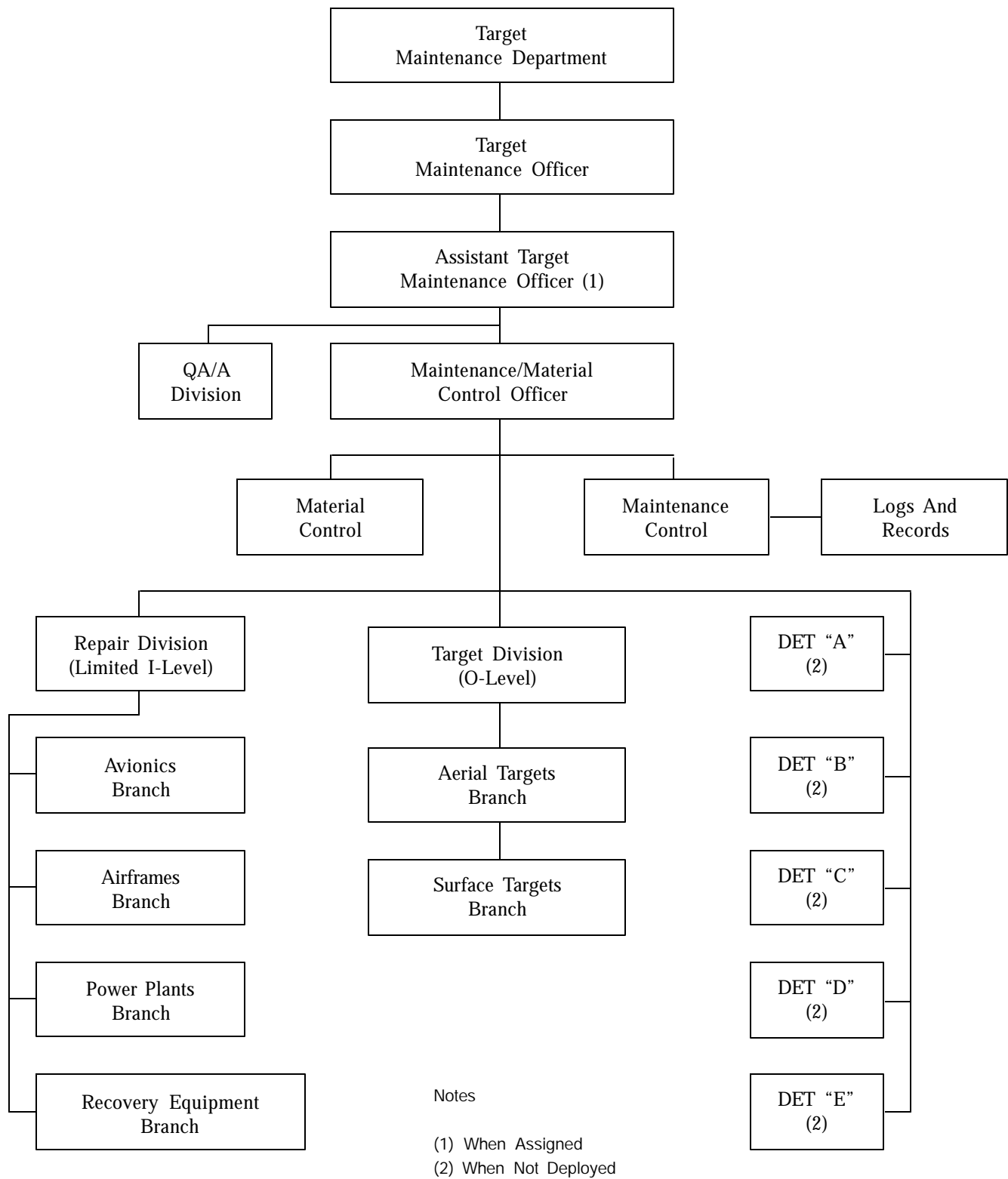


Figure 5-1-1. Standard Organizational (Limited Intermediate) Level Target Maintenance Department

Maintenance Activity	BQM-34	BQM-74	AQM-37	MQM-8G/ER/EER	QF-4
AFWTF NAVSTA ROOSEVELT ROADS, PR	O/I	O/I	O		
NAVAIRWARCENWPNDIV WHITE SANDS, NM	O/I				
PACMISRANFAC BARKING SANDS, HI	O/I	O/I		O/I	
NAVAIRWARCENWPNDIV POINT MUGU, CA	O/I	O/I	O	O/I	O/I
NASA WFF WALLOPS ISLAND, VA	O			O/I	
VC-6 NAS NORFOLK, VA		O/I			
VC-8 NAVSTA ROOSEVELT ROADS, PR		O/I	O		
COMFLEACT OKINAWA NAF KADENA JA		O/I			
O - ORGANIZATIONAL LEVEL MAINTENANCE I - INTERMEDIATE LEVEL MAINTENANCE					

Figure 5-1-2. Assignment of Target Maintenance Levels by Maintenance Activity

Maintenance Activity	QLT-1C	RMK-19/ A47U-3	RMK-31/ A47U-4	TDU-32 SERIES	TDU-34 SERIES
AFWTF NAVSTA ROOSEVELT ROADS, PR	O/I	I	I		O/I
NAVAIRWARCENWPNDIV POINT MUGU, CA		O/I	O/I	O/I	O/I
NAF EL CENTRO, CA	O/I				
NAVAL WEAPON STATION TR FAC BOARDMAN, OR	O/I				
MCAS YUMA, AZ	O/I				
NAVAIRWARCENWPNDIV CHINA LAKE CA	O/I				
NAF ATSUGI JA			I		
VC-8 NAVSTA ROOSEVELT ROADS, PR		O	O	O	O
NAS ROOSEVELT ROADS, PR, AIMD		I	I	I	I
NAS OCEANA, VA, AIMD		I	I		
LANTFLT/PACFLT			O		
CVs			I	I	I
CVW			O	O	O
NAS WHIDBEY ISLAND, WA			O	O	O
NAS WHIDBEY ISLAND, WA WEAPONS DEPT			I	I	I
O - ORGANIZATIONAL LEVEL MAINTENANCE I - INTERMEDIATE LEVEL MAINTENANCE					

Figure 5-1-2 Assignment of Target Maintenance Levels by Maintenance Activity (Cont'd)

TARGET SYSTEMS	MAINTENANCE PROCESS		DEFICIENCY REPORTING		
	OPNAVINST 8000.16A TARGET/ SYSTEM	OPNAVINST 4790.2H TARGET/ SYSTEM	OPNAVINST 8000.16A TARGET/ SYSTEM	OPNAVINST 4790.2H TARGET/ SYSTEM	OPNAVINST 5102.1C EXPLOSIVE COMPONENTS NOTE: CODR/EMR ONLY
AQM-37	X		X		X
BQM-34	X		X		X
BQM-74	X		X		X
MQM-8G/ER/EER	X		X		X
QF-4		X		X	X
TDU-32 SERIES	X	X	X		X
TDU-34 SERIES	X	X	X	X	X

Figure 5-1-3 Identification of Aerial Target Maintenance and Deficiency Reporting By OPNAVINST

5.1.3.4 Prior to submitting a request for target services, prospective target users should review the general description and availability of the targets and Target Auxiliary/Augmentation System (TA/AS) data contained herein and formulate a tentative listing of candidate targets which may satisfy the requirement. A user must have a target allocation established before submitting a request for target services. Figure 5-1-4 depicts a matrix of targets by category and type.

5.1.4 Aerial Targets

5.1.4.1 BQM-34S Missile Target. The BQM-34S target is a recoverable, remotely controlled, subscale, subsonic target capable of speeds up to mach 0.9 and altitudes from 10 to 50,000 feet. It is propelled during flight by a single J-69 or J85-100A turbojet engine which produces 1,940/2850 pounds of thrust at full throttle at sea level. The target is designed to be surface launched from short-rail or zero-length ground launchers using a single Rocket Assisted Takeoff (RATO) or air-launched from DC-130 aircraft. The target is controllable through normal flight maneuvers with capabilities of performing up to 5G turns. The system transmits target telemetry on the tracking down-link signal. Target recovery is executed by deploying a two-stage parachute. Recovery can be accomplished on land or at sea. When recovery is made at sea, the target can be retrieved by boat or helicopter.

5.1.4.2 BQM-74E Missile Target. The BQM-74E missile target is a recoverable, remotely controlled, subscale, subsonic target capable of speeds up to mach 0.75 and altitudes from 7 to 40,000 feet. It is propelled during flight by a single YJ400-WR-404 turbojet engine which produces 240 pounds thrust at full throttle at sea level. The target is designed to be surface launched from a zero length ground launcher utilizing dual Rocket Assisted Takeoff (RATO). When equipped with an air launch kit, the target can be air launched from the TA-4J, and DC-130A aircraft. The target is controlled through normal flight maneuvers with the capability of performing 75-degree bank angle turns. The target is normally controlled by a fixed or portable integrated tracking and control system transponder. Target recovery is executed by parachute and can be accomplished either on land or at sea by boat or helicopter.

5.1.4.3 AQM-37C Missile Target. The AQM-37C missile target is an air launched, supersonic, preprogrammed, nonrecoverable target, capable of flying at various speeds and altitudes. Current launch aircraft include the F-4, QF-4, and F-16. The target is capable of speeds from Mach 0.7 to Mach 4.0 at altitudes of 1,000 to 100,000 feet and has a range of approximately 155 nautical miles. Software modifications have enabled the target to also perform ballistic TBM and ARM type profiles for engagement, tracking, or training.

The target is capable of performing TBM type profiles of over 300 kft in altitude and up to Mach 5.0, when launched supersonically at 50 kft, 1.8 Mach, as well as low and mid-altitude ballistic profiles when launched at lower speeds and altitude. The target is powered by a LR-64 liquid propellant, engine using Mixed Amine Fuel (MAF) and Inhibited Red Fuming Nitric Acid (IRFNA). The AQM-37 series requires specific hypergolic storage and certification as described in OPNAVINST 8020.14/MCO P8020.11 (NOTAL) or MCO 8023.3 (NOTAL) and applicable type commander instructions. The target can be flown with or without UHF command control. When command control is installed, limited control capability (right and left turns, dive and pullout) is available to increase profile accuracy. A number of mission essential installation sets may be installed to augment the target for radar cross section, scoring, tracking, and command destruct capability.

5.1.4.4 MQM-8G/ER/EER VANDAL Target. The MQM-8 VANDAL target were developed from deactivated TALOS RIM-8G/J fleet missiles. The VANDAL targets were designed to provide a realistic threat of the midcourse and terminal phase of an attacking anti-cruise missile. The VANDAL targets are remotely controlled, non-recoverable vehicles which are launched from a land based, modified TALOS launcher by a solid propellant booster and propelled through flight by a ramjet engine. The MQM-8G has a variety of flight trajectories, cruise altitudes and descent angles. This standard VANDAL target has a speed of Mach 2.15 to 2.7 and an altitude range of 300 to 70,000 feet. The MQM-8G/ER VANDAL target is capable of an altitude of 20 to 5,000 feet. It has an extended fuel tank to accommodate additional fuel for extended ranges at low altitudes. The ER VANDAL has a speed of Mach 2.125 at 20 feet with a range of approximately 37.5 nmi. from launch. Both the MQM-8G and MQM-8G/ER VANDAL targets contain a command guidance system which receives information from a command guidance computer using real time radar tracking data that is transmitted to the target by UHF transmitters for azimuth control. Altitude is controlled by an on-board radar altimeter. The MQM-8G/ER VANDAL target has a speed of Mach 2.125 at 15 feet. The EER target is capable of altitudes of 5,000 feet to a final of 15 feet in a maximum sea state 4 condition, performing an 8G serpentine maneuver and the option to transition into a 4-5G jinking weave. Elimination of TALOS modules and realigning of remaining electronic modules increased the forward fuel cell from 36 to 48 inches. The increased fuel capacity translates into 5.5 nm of flight increasing the range from 37.5 to 43.0 nm. The MQM-8G/ER target contains the same command guidance system as the other VANDAL targets and an on-board radar altimeter controls altitude. A new homing system was developed and the EER target has the capability to impose the 4-5 jinking maneuver on the terminal homing guidance control.

Target	Aerial Target		Land Target	Tow Target Systems	
	Subscale	Fullscale		Aerial Tow Reeling Machine	Aerial Tow
BQM-34	X				
BQM-74	X				
AQM-37	X				
MQM-8G/ER/EER		X			
QF-4N/S		X			
QLT-1C			X		
RMK-19/A47U-3				X	
RMK-31/A47U-4				X	
TDU-32A/B					X
TDU-34A/A					X

Figure 5-1-4. Target Categories and Types

5.1.4.5 QF-4N/QF-4S Aircraft Target. The QF-4N/QF-4S aircraft target is a fullscale, supersonic, high altitude, remotely controlled version of the Navy F-4 Phantom aircraft. The aircraft is capable of speeds up to mach 2.0 and altitudes to 57,000 feet. The aircraft is two-place tandem seated and employs a low mounted, swept back wing. The QF-4N is powered by two J79-GE-8 engines with afterburner developing 10,900 pounds of thrust each at military power, and 17,000 pounds each in afterburner. The QF-4S is powered by two J79-GE-10B engines with afterburners, developing 11,810 pounds of thrust each at military power, and 17,800 pounds each in afterburner. The target is 58 feet 3 inches long and has a wing span of 38 feet 5 inches. It has external stores capability including provisions for carrying external fuel tanks and special equipment pods. The remote control system features the ITCS and employs a nose-mounted television camera for remote takeoff and landing. The remote control pilot flies the aircraft from a universal control console which closely duplicates the aircraft cockpit with control stick, rudder pedals and brakes, throttle control, and instrumentation. The ITCS target control console can also be employed for remote control. The aircraft retains its manned configuration and is flown much of the time with a flight crew onboard for remote pilot training and other manned missions.

5.1.5 Land Targets. The following is the only applicable land target:

5.1.5.1 QLT-1C Land Target. The QLT-1C land target is a remotely controlled, multiuse, moving target platform which simulates several types of land vehicles. The primary use is to train air crews in air-to-surface weapon delivery techniques. The lightweight tubular frame, with its Volkswagen engine, modified running gear, and automatic transmission and transaxle, make the QLT-1C a highly maneuverable target. Electromechanical actuators control the gear shifting, proportional steering, accelerating, and braking functions. These functions are activated through ultrahigh frequency signals received by an AN/DRW-29 receiver and decoder. The target has a top speed of 55 miles per hour, an average fuel consumption of 30 miles per gallon, and a 10 gallon fuel tank. A typical QLT-1C range is comprised of a central control tower where the remote control operator observes the full length of the operating track. The track runs on a line perpendicular to the control tower at a distance of 2,500 to 4,000 feet. The length of the track is typically 3,000 to 6,000 feet and the width is 300 to 500 feet. The target contains two rotating beacon lights, a white one for informing the remote control operator that the engine is running and a red one to warn the attacking aircrew that the target is not ready for an attack. The target can be augmented with locally manufactured radar reflectors to improve the ability of the aircrew to track the target.

5.1.6 Tow Target Systems

5.1.6.1 RMK-19/A47U-3 Reeling Machine and Launcher. The RMK-19/A47U-3 reeling machine and launcher is an airborne weapon training system designed to launch (reel out), tow, and recover (reel in) aerial tow targets for surface-to-air and air-to-air missile firing exercises. It is a semiautomatic tow reel and launching mechanism designed to be attached to an aircraft on one of its external stores stations. The launcher is capable of handling saddle-mounted aerial tow targets from 7 to 12.5 inches in diameter. The reeling machine launcher is manually controlled, utilizing a PEK-84/A47U-3 control unit located in the cockpit of the tow aircraft. The control unit provides controls for the launcher (up/down), brake (on/off), reel (in/out), cable cut, and turbine blade pitch angle. The turbine blade pitch angle determines the speed at which the tow target is reeled out and in.

5.1.6.2 RMK-31/A47U-4 Reeling Machine and Launcher. The RMK-31/A47U-4 reeling machine and launcher is an airborne weapon training system used to launch (reel out), tow, and recover (reel in) aerial tow targets for surface-to-air and air-to-air missile firing exercises. It was designed in response to fleet requirements for a small, lightweight tow target reeling machine. The RMK-31/A47U-4 system incorporates most of the components of the RMK-19/A47U-3 reeling machine launcher system, including the PEK-84/A47U-3 reeling machine and launcher control unit. The RMK-31/A47U-4 is a semiautomatic tow reel and launching mechanism which attaches to one of the external stores stations of an aircraft. It is capable of handling saddle-mounted aerial tow targets from 7 to 12.5 inches in diameter. The reeling machine launcher is manually controlled utilizing the PEK-84/A47U-3 control unit located in the cockpit of the tow aircraft. The control unit provides control for the launcher (up/down), brake (on/off), reel (in/out), cable cut, and turbine blade pitch angle. The turbine blade pitch angle determines the speed at which the tow target is reeled in and out.

5.1.6.3 TDU-32A/B Aerial Banner Tow Target. TDU-32A/B aerial banner tow targets are rectangular in shape and provide an effective, low cost device for air-to-air and surface-to-air gunnery training. The TDU-32A/B fabric is 90 percent radar reflective. The targets are launched from the runway in accordance with standard snatch or drag take-off procedures. The targets are towed approximately 1,800 feet behind the tow aircraft. Target recovery is accomplished by dropping the target in a recovery area following the mission.

5.1.6.4 TDU-34A/A Aerial Tow Target. The TDU-34A/A is a multipurpose aerial tow target developed for air-to-air and surface-to-air gunnery and missile training. The target

vehicle consists of an aluminum tubular body section, a nose cone, tail fins, and an aft reflector housing. Radar corner reflectors are located in the nose cone and aft reflector housing to provide passive radar cross sections for illumination in the E-, F-, G-, H-, I-, and J-frequency bands. The target is capable of being towed at speeds of up to mach 0.9 and from altitudes of 400 to 30,000 feet.

5.1.7 Maintenance Philosophy

5.1.7.1 The maintenance philosophy for targets and equipment is based on the concept which performs required inspections and maintenance at the lowest maintenance level capable of performing the work. In general, scheduled maintenance actions for targets are performed at the organizational and intermediate levels by designated target maintenance activities as assigned in chapters 5.2 and 5.3 to assure that all targets are maintained at the highest level of readiness, safety, and reliability with the optimum use of manpower, material, and fiscal resources. Standard rework is not authorized to be conducted at the organizational or intermediate levels of maintenance except for certain tow target reels and launchers. In addition, scheduled component replacement and scheduled component overhaul are not authorized to be performed except approved by COMNAVAIRSYSCOM.

5.1.7.2 All maintenance is performed in accordance with the approved COMNAVAIRSYSCOM maintenance plan, maintenance instruction manuals, maintenance requirement cards developed for each unique application of the target system or equipment, and NAVAIR 01-1A-75 (Airborne Weapons and Associated, Consumable Material Applications and Hazardous Material Authorized Use List) (NOTAL) for hazardous material control and management. Maintenance requirement cards are derived from the applicable authorized maintenance instruction manual.

5.1.7.3 Hazardous Materials Control and Management Program. All consumable hazardous materials used during the maintenance of targets, see volume I, section 1, para 1.6.2, will be minimized and controlled through NAVAIR 01-1A-75 (Airborne Weapons and Associated equipment, Consumable Material Applications and Hazardous Material Authorized Use List) (NOTAL). Only materials in the NAVAIR 01-1A-75 "authorized use list" will be utilized for target systems maintenance.

5.1.8 Target and Engine Logbooks. Logs and records are an integral part of target system maintenance including the separate Engine logbook. Logs are maintained for each target and are the administrative means of providing managers with target age, status, operational history, modification, configuration, and transfer and receiving data. Properly maintained logbooks document each individual target's operational history, movement, modification, and maintenance

actions throughout its life cycle. Target system logbooks serve as the baseline document for this purpose. Specific guidelines on the proper logging procedures are included in the logbook and are further explained in the applicable authorized NAVAIRSYSCOM technical manuals. The logbook is a hard cover, loose leaf ring binder containing separators and page insert forms. Logbook should also be maintained digitally and a disk provided with the logbook. Upon acceptance of the target, the accepting maintenance activity initiates the target logbook which is kept in the maintenance and production control office. Logbook entries, or data for subsequent entry into the logbooks, are required at each maintenance level.

5.1.9 Target Discrepancy Books/File. Maintenance control will maintain a target discrepancy book for each target assigned, with the exception of tow banners and tow lines. The target discrepancy book is designed to provide maintenance personnel with an accurate, comprehensive, and chronological record of all operations and maintenance performed on a specific target. The target discrepancy book, which is set up by target serial number, must accurately reflect the status of all pending maintenance requirements.

5.1.10 Maintenance Data System Reporting

5.1.10.1 The maintenance data system was developed as an integral part of the Aviation Maintenance and Material Management (AV-3M) system. The maintenance data system is a management information system designed to provide statistical data for use at all management levels relative to target maintainability and reliability, equipment configuration and technical directive status, target mission capability and utilization, material usage, material nonavailability, and maintenance and material processing times. The system is designed so that each worker, when performing a maintenance action, converts a narrative description of the job into codes and enters coded information on standard forms and source documents. These source documents are collected and transmitted to a data services facility where information is converted to machine records. The data services facility then uses the machine records to produce periodic listings summarizing the submitted data. These reports are supplied to maintenance managers to provide assistance in planning and directing the maintenance effort. In addition, information in machine records is forwarded to the central data processing facility, the Naval Sea Logistics Center (NAVSEALOGCEN). They provide data to satisfy the management requirements of type commanders and other up-line managers.

5.1.10.2 In general, data may be considered to flow through three distinct but related cycles: (1) the local cycle at organizational and intermediate level maintenance; (2) the local-central cycle between the local activity (ship or sta-

tion) and the NAVSEALOGCEN; and (3) the central-external cycle between the NAVSEALOGCEN and the various system commands, offices, and other commands other than the originating command. Figure 5-1-6 depicts the general pattern of these three cycles.

5.1.10.3 The basic source of data in the local cycle is the individual worker. Upon completion of each job, a worker turns in a completed source document to the work center supervisor. It is the work center supervisor's responsibility to check all source documents and ensure that they are complete, accurate, and forwarded to maintenance control for screening. Having collected all source documents from maintenance control, the analyst delivers them to the data services facility of the supporting ship or station. The data services facility enters the data into the data system from the source documents. Any questionable data are referred back to the originating activity for correction or clarification. Entered and verified data are converted to magnetic tapes by the data services facility and machine listings of data on a daily or specified frequency, and are printed for the use of the originating activity. Magnetic tapes of the entered data will

be retained by the data services facility. Source documents are returned to the originating activity for retention after selected data has been entered. Chapter 5.5 and appendix H, pages H-32 through H-40, depicts examples of target source documents and also provides instructions for completing the forms and records. Appendix H, page H-42, also includes a listing of all applicable type equipment codes necessary for completion of the forms. Due to the mobility of most operating activities, it frequently becomes necessary to transfer the responsibility of automated data processing support. Transfer must be carefully executed to ensure continuity of reporting and integrity of local data files.

5.1.10.4 Through the local-central cycle, duplicate record files are made by the data services facility and are mailed to the NAVSEALOGCEN. Here data is combined with data received from all other reporting facilities and reproduced on machine tapes for computer processing. Machine runs for errors, detectable by computers, are made by the NAVSEALOGCEN and results of this error analysis are forwarded to individual reporting activities.

TARGET SYSTEM	APPLICABLE TECHNICAL PUBLICATIONS	
AQM-37C		
PUBNO	NSN	TITLE
01-40AV-75A1-3	0801-LP-003-2410	AQM-37 A-4/TA-4 AIRBORNE WEAPONS CHECKLIST
01-90TBA-1	0801-LP-114-1020	AQM-37A (BEECH) MISSILE TARGET MAINT INSTRS W/IPB
11-600-14-6-1	0811-LP-344-2500	LAU-24B/A LAUNCHER PERIODIC MAINT REQUIREMENTS CAR
17-15-27	0817-LP-005-6020	TEST SET TARGET ELECTRICAL CIRCUIT AN/GSM-46 ORG & INTER MAINT W/IPB
17-15FB-51	0817-LP-142-6510	TEST SET MULTI-STATION GUIDED MISSILE LAUNCHER ELECTRICAL CIRCUIT, NAVY MODEL TTU-221/E OPER & MAINT MANUAL W/IPB
AW-840A-WUC-800	0801-LP-804-9100	AQM/BQM SERIES TARGET DRONES WUC
AW-840AQ-MMO-000	0816-LP-601-3500	MISSILE TARGET ORGANIZATIONAL MAINT IPB
AW-840AQ-MMO-100	0816-LP-653-7000	MISSILE TARGET-NAVY MODEL AQM-37C IPB ORGAN MAINT W/IPB
AW-840AQ-MPG-000	0816-LP-803-3200	OPERATIONAL MISSION PLANNING GUIDE MISSILE TARGET AQM-37C TARGET
AT-820BA-MRC-100	0816-LP-601-4000	AERIAL TARGET TEST SET PREOPERATIONAL CHECKLIST
AT-820BA-MRC-200	0816-LP-601-4500	PERIODIC MAINT REQUI MANUAL AQM-37C TARGET TEST SET
AT-820BA-S53-100	0816-LP-601-2010	AERIAL TARGET TEST SET A/E24T-173(XN-1) ORG & INTER MAINT W/IPB
BQM-34		
01-75GAA-75-8	0801-LP-007-9500	CONVENTIONAL WEAPONS CHECKLIST C-130F, KC-130F/R/T
01-75GAA-75-22	0801-LP-884-0510	CONVENTIONAL WEAPONS CHECKLIST KC-130 MODELS F/R/T
01-75GAA-75-23	0801-LP-255-8020	DC-130A BQM-34 CONVENTIONAL WEAPONS CHECKLIST
01-100TB-00	0801-LP-375-7000	BQM-34A/S/E/TECHNICAL MANUAL LIST TARGET (TELEDYNE)
01-100TBA-1	0801-LP-115-6050	BQM-34A/S TARGET FLIGHT CONTROLLER MANUAL
01-100TBA-2-1	0801-LP-634-9376	BQM-34A GENERAL (TELEDYNE) MAINTENANCE INSTRUCTIONS
01-100TBA-2-2	0801-LP-195-0520	BQM-34A (TELEDYNE RYAN) UNCRATING ASSEMBLY AND DISASSEMBLY
01-100TBA-2-3	0801-LP-195-1010	BQM-34A (TELEDYNE RYAN) SERVICING & AIRFRAME MAINTENANCE
01-100TBA-2-4	0801-LP-195-1510	BQM-34A (TELEDYNE RYAN) POWER PLANT MAINTENANCE INSTRUCTIONS
01-100TBA-2-4-2	0801-LP-009-5730	BQM-34A/S POWER PLANT J85-GE-100 ORGANIZATIONAL
01-100TBA-2-10	0801-LP-195-4530	BQM-34A/S AIRCRAFT ELECTRONIC AND GUIDANCE SYSTEM
01-100TBA-2-10-2	0801-LP-259-1500	BQM-34A/S, ELECTRONIC AND GUIDED SYSTEM MODIFIED

Figure 5-1-5. List of Target Technical Publications

TARGET SYSTEM		APPLICABLE TECHNICAL PUBLICATIONS	
BQM-34 (Cont'd)			
PUBNO	NSN	TITLE	
01-100TBA-2-10-3	0801-LP-272-2510	BQM-34S ELECTRONIC AND GUIDANCE SYSTEM MODIFIED PE	
01-100TBA-2-11	0801-LP-195-5020	BQM-34A/S UTILITY SYSTEMS (TELEDYNE RYAN AERO)	
01-100TBA-2-12	0801-LP-196-4540	UPLOAD PRE/POSTFLIGHT & DOWNLOADING	
01-100TBA-2-13	0801-LP-195-5520	BQM-34S DETAILED DECONTAMINATION "O" MAINTENANCE INSTRUCTION	
01-100TBA-2-14	0801-LP-196-5020	BQM-34A/S WIRING DIAGRAMS (TELEDYNE RYAN AERO) ORG	
01-100TBA-2-15	0801-LP-019-3860	BQM-34 A/S ORGANIZATIONAL MAINTENANCE COMMON TARGET AUXILIARY SYS.	
01-100TBA-2-20	0801-LP-195-6000	BQM-34 AUGMENTATION HIGH ALTITUDE SMOKE SYSTEM MAINTENANCE	
01-100TBA-2-21	0801-LP-195-6510	BQM-34A AUGMENTATION HIGH ALTITUDE SMOKE VISUAL	
01-100TBA-2-21-1	0801-LP-255-4500	BQM-34A/S IDENTIFICATION SYSTEM (RAM-AIR) AUGMENTATION	
01-100TBA-2-22	0801-LP-195-7510	BQM-34A AUGMENTATION "IR" TAU-56A/V "O" MAINT. INSTRUCTION	
01-100TBA-2-24	0801-LP-195-8000	TEMPERATURE INDICATOR TURBINE INLET (BOEING VERTOL)	
01-100TBA-2-28	0801-LP-228-2010	BQM-34A/S AUGMENTATION SCORING SYSTEMS AN/DRQ-4	
01-100TBA-2-29		BQM-34A/S AUGMENTATION DUAL TOWBEE TARGET TTU-22/B ORGAN MAINT INSTRUCTION	
01-100TBA-2-30	0801-LP-228-3000	BQM-34A AUGMENTATION X/C BAND TWT AMPLIFIER	
01-100TBA-2-31	0801-LP-228-3500	BQM-34A AUGMENTATION C-BAND TWT AMPLIFIER (TELEDYNE)	
01-100TBA-2-32	0801-LP-228-4010	BQM-34A/S (NAVY) RADAR AUGMENTATION, S-BAND TWT	
01-100TBA-2-36	0801-LP-228-5510	BQM-34A (TELEDYNE RYAN) AUGMENTATION INFRARED ORGANIZATIONAL	
01-100TBA-2-38	0801-LP-314-5010	AUGMENTATION FIRST MOTION UMBILICAL DISCONNECT	
01-100TBA-2-40	0801-LP-320-3500	RADAR AUGMENTATION SYSTEM AUGMENTATION X/C BAND	
01-100TBA-2-41	0801-LP-320-4500	AUGMENTATION INTEGRATED EXPENDABLE EMITTER SYSTEM	
01-100TBA-2-42	NONE	AUGMENTATION ELECTRONIC COUNTERMEASURES SYS "O" MAINT. INSTRUCTION	
01-100TBA-2-5	0801-LP-195-2010	FUEL & OIL SYSTEMS ORGAN MAINT. INSTR. BQM-34A/S	
01-100TBA-2-6	0801-LP-195-2540	BQM-34A/S (TELEDYNE) OPERATIONAL SYSTEMS TESTS, ORGANIZATIONAL	
01-100TBA-2-7	0801-LP-195-3020	BQM-34A/S RECOVERY SYSTEM (BSC DTD 2/1/80 THRU CHG.)	

Figure 5-1-5. List of Target Technical Publications (Cont'd)

TARGET SYSTEM	APPLICABLE TECHNICAL PUBLICATIONS	
BQM-34 (Cont'd)		
PUBNO	NSN	TITLE
01-100TBA-2-8	0801-LP-195-3530	BQM-34A/S ELECTRICAL SYSTEM (TELEDYNE RYAN) ORGANIZATIONAL
01-100TBA-2-9	0801-LP-195-4010	BQM-34A/S FLIGHT CONTROL SYSTEM ORGANIZATIONAL
01-100TBA-4	0801-LP-115-7560	BQM-34A/S TARGET IPB
01-100TBA-6-1	0801-LP-005-5080	BQM-34S PRELAUNCH TARGET DRONE MAINTENANCE RQMTS. MANUAL
01-100TBA-6-2	0801-LP-208-4010	BQM-34A MISSILE TARGET, POSTLAUNCH SERVICING MRC
01-100TBA-6-3	0801-LP-208-4510	BQM-34A TARGET DRONE(TELEDYNE RYAN AERONAUTICAL) ACCEPTANCE INITIAL BUILDUP MRC
05-20QA-14	0805-LP-043-7010	ELEVATOR, SERVO DRIVE (LEAR) OVHL. INSTRS.
05-20QA-15	0805-LP-043-7510	ACTUATOR ROTARY SERVO (LEAR-SIEGLER) IPB (BASIC
05-20QA-17	0805-LP-043-8500	CONTROL BOX, FLIGHT, AND RACK ASSY (LEAR), IPB
05-20QA-22	0805-LP-044-1000	SYNCHRONIZER (CEDAR) OVHL. INSTRS.
05-20QA-23	0805-LP-044-1500	SYNCHRONIZER PN 130179&01 (CEDAR) IPB
05-20QA-24	0805-LP-044-2010	GYRO, VERTICAL (LEAR) OVHL. INSTR.
05-20QA-25	0805-LP-044-2510	GYRO, ROLL AND PITCH DISPLACEMENT VERTICAL (LEAR SIEGLER) W/IPB
05-20QA-32		VERTICAL REFERENCE GYRO INDICATOR DEPOT MAINT. W/IPB
05-20QA-46	0805-LP-189-3000	FLIGHT CONTROL SYSTEMS AUTOMATIC, INTERMEDIATE MAINT. INSTR.
05-20QA-46-1	0805-LP-007-2520	AUTOMATIC FLIGHT CONTROL SYSTEM INTERMEDIATE MAINT.
05-20QA-47	0805-LP-187-0500	FLIGHT CONTROL BOX, AND RACK ASSY (LEAR SIEGLER) OVERHAUL INSTRUCTIONS
05-20QA-48	0805-LP-186-6000	BOX ASSY FLIGHT CONTROL, IPB
05-20QA-48-1	0805-LP-009-5720	FLIGHT CONTROL BOX ASSEMBLY IPB
05-20QA-49	0805-LP-186-6500	ACTUATOR ASSY AILERON SERVO AND ELEVATOR SERVO OVERHAUL INSTRUCTIONS
05-20QA-50	0805-LP-186-7000	ACTUATOR ASSY AILERON SERVO
05-20QA-51	0805-LP-186-7500	BOX ASSY TELEMETRY CALIBRATION (LEAR SIEGLER) OVERHAUL INSTRUCTION
05-20QA-52	0805-LP-186-8000	BOX ASSY TELEMETRY CALIBRATION (LEAR SIEGLER) IPB
05-20QA-56	0805-LP-183-2000	CALIBRATION UNIT, TELEMETRY (LEAR SIEGLER) OVERHAUL
05-20QA-63	0805-LP-184-6600	AUTOMATIC FLIGHT CONTROL SYSTEM A/A37G-9A (LEAR SIEGLER)

Figure 5-1-5. List of Target Technical Publications (Cont'd)

TARGET SYSTEM	APPLICABLE TECHNICAL PUBLICATIONS	
BQM-34 (Cont'd)		
PUBNO	NSN	TITLE
05-20QA-64	0805-LP-184-5010	BOX FLIGHT CONTROL RACK ASSY AND ACCELEROMETER (LEAR)
05-20QA-71	0805-LP-190-9000	TACAN GUIDANCE AUGMENTATION SYSTEM (TGAS) AUTOMATIC FLIGHT CONTROL SYSTEM A/A37G-12 (LEAR SIEGLER) MAINTENANCE INSTRUCTION
05-45QAA-2	0805-LP-103-0510	BOX RECOVERY RELAY (RYAN) IPB
05-45QAA-3	0805-LP-103-1000	BOX RECOVERY RELAY (RYAN) IPB
16-45-947	0816-LP-164-7000	METER, TRANSISTOR MICROWAVE POWER (RYAN) SERVICE INSTRUCTION
16-45-948	0816-LP-164-7500	METER, TRANSISTOR MICROWAVE MODEL P-3, (POLLARD), MOD P/N 124GL14-1 (RYAN) IPB
16-45-953	0816-LP-165-0000	GENERATOR, MICROWAVE SIGNAL (POLARAD), IPB
16-45-954	0816-LP-165-0500	GENERATOR, PULSE (POLARAD), SERVICE INSTRUCTIONS
16-45-964	0816-LP-165-5510	CONTROL BOX, REMOTE (TELEDYNE RYAN AERONAUTICAL) ORG & INTER MAINT INSTR.
16-45-965	0816-LP-165-6020	INDICATOR PANEL, REMOTE (RYAN) OVERHAUL INSTRUCTIONS W/PB
16-45-1227	0816-LP-186-4000	DISPENSER, CHAFF, COUNTERMEASURES, TYPE AN/ALE-33 MAINT INSTR. W/IPB
16-45-1238	0816-LP-177-6520	TESTER, SLEWING UNIT RADAR ALTIMETER P/N 124G759 OPERATOR & SERVICE INSTR.
16-45-974	0816-LP-166-0510	TEST CONSOLE, RADIO CONTROL BENCH (TELEDYNE RYAN) IPB
16-45-967	0816-LP-165-7000	SIMULATOR, ALTITUDE AND AIRSPEED (RYAN), OPER, SERVICE AND REPAIR INSTR.
16-45-1653	0816-LP-231-7500	TEST CONSOLE, ELECTRICAL/AUTOFLIGHT SYSTEM (TELEDYNE RYAN) ORG. & INTER. MAINT. INSTR. W/IPB
16-45-1654	0816-LP-231-8500	TEST CONSOLE, AUTOPILOT BENCH (TELEDYNE RYAN) ORG & INTER MAINT INSTR. W/IPB
16-45-1655	0816-LP-231-9000	PANEL, REMOTE INDICATOR (TELEDYNE RYAN) ORG. & INTER. MAINT. INSTR. W/IPB
16-45-1678	0816-LP-231-9500	CONTROL BOX, REMOTE (TELEDYNE RYAN) ORG. & INTER. MAINT. INSTR. W/IPB
16-45-1888	0816-LP-278-0010	RADAR LOW ALTITUDE CONTROL SYSTEM (RALACS) (TELEDYNE) ORG. OPERATOR & MAINT. INSTR. W/IPB
17-1-115	0817-LP-141-3000	FIXTURE, ROCKET MOTOR ALIGNMENT, ORG. & INTER. MAINT. INSTR. W/IPB

Figure 5-1-5. List of Target Technical Publications (Cont'd)

TARGET SYSTEM		APPLICABLE TECHNICAL PUBLICATIONS
BQM-34 (Cont'd)		
PUBNO	NSN	TITLE
17-1-530	0817-LP-000-5000	CODER, AUDIO FREQUENCY BCC-6 #BABCOCK# SERVICE INSTRUCTIONS
17-1-531	0817-LP-000-5500	CODER, AUDIO FREQUENCY BCC-6 #BABCOCK# IPB
17-1-536	0817-LP-000-8010	TEST CONSOLE BASIC SYSTEMS (RYAN) OPER. MAINT. W/IPB
17-1-538	0817-LP-000-8510	INDICATOR, LAUNCH CHECKOUT (RYAN) OPER. AND MAINT.
17-1-539	0817-LP-000-9000	LAUNCH CHECKOUT CONSOLE ASSY-TARGET IGNITION KIT-PRELAUNCH CHECKOUT INDICATOR , LAUNCH CONSOLE PANEL- GRD LAUNCH CHECKOUT
17-1-540	0817-LP-000-9500	ALIGNMENT EQUIPMENT, TARGET DRONE, USAF MOD Q-2C OPER., SERVICE. & REPAIR INSTR.
17-1-541	0817-LP-001-0000	ALIGNMENT EQUIPMENT Q-2C TARGET DRONE (RYAN)IPB
17-15-27	0817-LP-005-6020	TEST SET TARGET ELECTRICAL CIRCUIT AN/GSM-46 ORG & INTER. MAINT. INSTRUCTION
17-15B-30	0817-LP-008-7000	TEST SET, DRONE MISSILE LAUNCHER ELECTRICAL CIRCUIT OPER. & MAINT. INSTR. W/IPB
17-15B-33	0817-LP-008-8000	TEST STAND BASE AND CONTROL PANEL, ROTARY ACTUATOR IPB
17-15B-54	0817-LP-141-3500	TEST SET, POWER DISTRIBUTION BOX (TELEDYNE RYAN) ORG & INTER MAINT INSTR. W/IPB
17-15BA-227	0817-LP-142-0010	UMBILICAL TEST SET ORGANIZATIONAL INTERMEDIATE MAINTENANCE
17-15BA-230	0817-LP-143-2000	TEST SET, RECOVERY RELAY BOX (TELEDYNE RYAN) OPER & SERV INSTR. W/IPB
17-15CF-132-1	0817-LP-007-2320	VDA DKW-3 TEST ADAPTER IPB INTERIM MAINT
17-15CF-133	0817-LP-182-5500	TEST SET, SERVO ACTUATOR (LEAR SIEGLER) OPER AND MAINT INSTR. W/IPB
17-15CF-155	0817-LP-225-9000	TEST SET TTU-379/A37G-12 GUIDANCE AUGMENTATION SYS OPER & MAINT INSTR. W/IPB
17-15CL-7	0817-LP-027-7500	TEST PANEL ASSY, GYRO #RYAN#, OPER. AND SERV. INSTR. W/IPB
17-15KN-1	0817-LP-040-5010	TEST SET GYRO SINE TABLE (RYAN) OPER. SERV. AND REPAIR INSTR. W/IPB
17-20GX-73	NONE	AERIAL TARGET TEST SET INSTRUMENT CALIBRATION PROCEDURE
19-1-74	0819-LP-000-8010	GROUND HANDLING EQUIPMENT BQM-34 TARGET DRONE GROUND HANDLING EQUIP., OPER. & MAINT. INSTR. W/IPB
19-1-119	0819-LP-052-7500	LAUNCHER, GROUND (TELEDYNE RYAN AERONAUTICAL), ORG. & INTER. MAINT. INSTR. W/IPB

Figure 5-1-5. List of Target Technical Publications (Cont'd)

TARGET SYSTEM		APPLICABLE TECHNICAL PUBLICATIONS
BQM-34 (Cont'd)		
PUBNO	NSN	TITLE
AE-492TA-MMM-000	0816-LP-607-7500	COUNTERMEASURES DISPENSING SET
AW-840AA-WUC-800	0801-LP-804-9100	AQM/BQM SERIES TARGET DRONES WUC
BQM-74		
01-30TBA-2-3.1	0801-LP-661-4603	ORG/INT LEVEL TARGET DRONE BQM-74/E IPB AERO GROUND EQUIPMENT
01-30TBA-2-3.2	0808-LP-661-4596	BQM-74/E MAINTENANCE INSTR. GROUND EQUIPMENT
01-BQM74-1	0801-LP-290-0040	CONTROLLER'S MANUAL-ORGANIZATIONAL
01-BQM74-2-1-2-1	0801-LP-550-4010	BQM-74 TARGET DRONE VOL II CHAPTER 5 SECTION I SYSTEMS TEST MAINT. INSTR.
01-BQM74-2-2	0801-LP-324-2020	AIR LAUNCHED TARGET DRONE BQM-74
01-BQM74-4	0801-LP-324-2520	TARGET DRONE BQM-74 IPB
01-BQM74-6-1	0801-LP-534-5510	TARGET DRONE BQM-74 (SURFACE AND AIR LAUNCH) PRELAUNCH MRC
01-BQM74-6-2	0801-LP-534-6010	TARGET DRONE BQM-74 POST LAUNCH/SERVICING MRC
01-BQM74-6-3	0801-LP-534-6510	TARGET DRONE BQM-74 ACCEPTANCE/INITIAL BUILDUP MRC
01-BQM74-75	0801-LP-303-3520	TARGET DRONE AIRBORNE WEAPONS CHECKLIST
01-BQM74-75-1	0801-LP-887-7500	SURFACE LAUNCHED AIRBORNE WEAPONS CHECK LIST BQM-74C/E TARGET
01-BQM74-75-2	0801-LP-009-1540	AIRBORNE WEAPONS CHECKLIST SURFACE LAUNCHED
16-30ADU482-1	0816-LP-362-7010	TARGET DRONE BQM-74C/E AIR LAUNCH ADAPTER
01-BQM74E-1 E-1.1 E-1-1 E-2	0816-LP-370-4500	TEST SET TARGET SYSTEM AN/TTU-384/E (NORTHROP) MAINT. INSTR. W/IPB
01-BQM74E-2-1.2.1	0801-LP-878-5010	BQM-74E MAINTENANCE INSTRUCTION VOL 2 CH 5 SECT 1 ITCS SYSTEM TEST "O"
01-BQM74E-2-1-2.2	0801-LP-878-5510	BQM-74E MAINTENANCE INSTRUCTION VOL 2 CH 5 SECT 2 VEGA SYSTEM TEST "O"
01-BQM74E-2-1.2.3	0801-LP-878-6010	BQM-74E MAINTENANCE INSTRUCTION VOL 2 CH 5 SECT 3 MSR SYSTEM TEST "O"
01-BQM74E-2-2	0801-LP-878-1510	TARGET DRONE MAINTENANCE INSTRUCTIONS
01-BQM74E-4	0801-LP-878-1010	TARGET DRONE IPB INTERMEDIATE/ORGANIZATIONAL
01-BQM74E-6-1	0801-LP-889-7000	TARGET DRONE BQM-74E (SURFACE AND AIR LAUNCH)

Figure 5-1-5. List of Target Technical Publications (Cont'd)

TARGET SYSTEM	APPLICABLE TECHNICAL PUBLICATIONS	
BQM-74 (Cont'd)		
PUBNO	NSN	TITLE
01-BQM74E-6-2	0801-LP-889-7500	TARGET DRONE BQM-74E POST LAUNCH/SERVICING MAINT R
01-BQM74E-6-3	0801-LP-889-8000	TARGET DRONE BQM-74E ACCEPTANCE/INITIAL BUILDUP
01-BQM74EI-1	TBD	TARGET DRONE CONTROLLERS MANUAL ORGANIZATIONAL
01-BQM74EI-1.1	TBD	TARGET DRONE CONTROLLERS MANUAL ORGANIZATIONAL EXTENDED RANGE
01-BQM74EI-2-1.1	TBD	BQM-74E MAINTENANCE INSTRUCTION VOL 2 CH 1-4 DE- SCRIPTION & BUILD UP "O"
01-BQM74EI-2-1.2.1	TBD	BQM-74E MAINTENANCE INSTRUCTION VOL 2 CH 5 SECT 1 ITCS SYS TEST "O"
01-BQM74EI-2-1.3	TBD	BQM-74E TARGET DRONE MAINTENANCE INSTRUCTION "O"
01-BQM74EI-2-2	TBD	TARGET DRONE MAINTENANCE INSTRUCTIONS
01-BQM74EI-6-1	TBD	TARGET DRONE BQM-74E (SURFACE AND AIR LAUNCH) PRE- LAUNCH, SERVICE MRC
01-BQM74EI-6-2	TBD	TARGET DRONE BAM-74E POST LAUNCH/SERVICING MRC
01-BQM74EI-6-3	TBD	TARGET DRONE BQM-74E ACCEPTANCE/INITIAL BUILDUP MRC
02B-30E-6-1	0802-LP-031-6010	TURBOJET ENGINE J400-WR-404
16-30ADU482-1	0816-LP-362-7010	TARGET DRONE BQM-74E AIR LAUNCH ADAPTER
01-BQM74E-1 E-1.1 E-1-1 E-2	0816-LP-370-4500	TEST SET TARGET SYSTEM AN/TTU-384/E (NORTHROP)
TA/AS		
16-30DPT1-1	0816-LP-372-2500	RADAR TRANSMITTING SET AN/DPT-1(V) (RAYTHEON CO)
16-30DKW4-1	0816-LP-804-6400	TARGET CONTROL TRANSPONDER AN/DKW-4 (V) IPB INTERMEDIATE MAINTENANCE INSTR. W/IPB
16-30DLQ3-2-1	0816-LP-326-6500	COUNTERMEASURES SET AN/DLQ-3B (RODALE ELEC) MAINTENANCE
16-30DLQ3C-1	0816-LP-625-7500	COUNTERMEASURES SET AN/DLQ-3C(V) I-LEVEL MAINTENANCE
16-30DPM26-1	0816-LP-598-1500	TRANSPONDER TEST SET AN/DPM-26 P/N 407663-1
16-30DPN90-1	0816-LP-372-3000	RADAR TRACKING TRANSPONDERS
16-30DKW3B-1	0816-LP-003-0440	TRANSPONDER SET AN/DKW-3B(V) INTERMEDIATE INSTRUCTIONS
16-30DPT2-1	0816-LP-598-3500	RADAR TRANSMITTING SET AN/DPT-2 (V)

Figure 5-1-5. List of Target Technical Publications (Cont'd)

TARGET SYSTEM	APPLICABLE TECHNICAL PUBLICATIONS	
TA/AS (Cont'd)		
PUBNO	NSN	TITLE
16-30DPT2A-1	0816-LP-075-9000	RADAR TRANSMITTAL SET ORGANIZATIONAL INTERMEDIATE W/IPB
16-30DRM19-1	0816-LP-075-9500	TEST SET, RADIO, AN/DRM-19 (BABCOCK), OPER. AND SREV. INSTR. W/IPB
16-30DRM20-1	0816-LP-203-4020	GENERATOR, SIGNAL AN/DRM-20 (BABCOCK), OPER., SERV. INSTR. W/IPB
16-30DRM29-1	0816-LP-082-3500	TEST SET, AN/DRM-29 (XAN-1) TRANSPONDER SET, OPER. & SERVICE INSTR. W/ ELECTRICAL PARTS LIST
16-30DPM26-1	0816-LP-619-6000	TRANSPONDER TEST SET AN/DPM-26 P/N 407663-1
16-30DRM19-1	0816-LP-075-9000	TEST SET, RADIO, AN/DRM-19 (BABCOCK), OPER. AND SREV. INSTR. W/IPB
16-30DRM20-1	0816-LP-075-9500	GENERATOR, SIGNAL AN/DRM-20 (BABCOCK), OPER., SERV.
16-30DRM29-1	0816-LP-203-4020	TEST SET, AN/DRM-29 (XAN-1) TRANSPONDER SET,
16-30GSQ228-1	0816-LP-629-0000	MISS DISTANCE ANALYZER SET OPERATION INSTRUCTIONS
16-30GSQ228-2	0816-LP-004-9460	MISS DISTANCE ANALYZER SET IPB INTERMEDIATE W/IPB
16-30USM416-1	0816-LP-353-9500	TEST SET TARGET DRONE AN/USM-416, INTERMEDIATE
16-30USM417-1	0816-LP-352-4010	TEST SET TARGET DRONE AN/USM-417, INTERMEDIATE
16-30USM418-1	0816-LP-354-0010	TEST SET TRANSPONDER SET AN/USM-418, INTERMEDIATE
16-30DSQ50-2	0816-LP-629-1000	MISS DISTANCE SENSOR AN/DSQ-50
16-30USM416-1	0816-LP-353-9500	TEST SET TARGET DRONE AN/USM-416, INTER MAINTENANCE W/IPB
16-30USM417-1	0816-LP-352-4010	TEST SET TARGET DRONE AN/USM-417, INTER MAINTENANCE W/IPB
16-30USM418-1	0816-LP-354-0010	TEST SET TRANSPONDER SET AN/USM-418, INTER MAINTENANCE W/IPB
AE-492TA-MMM-000	0816-LP-607-7500	COUNTERMEASURES DISPENSING SET
SUPPORT EQUIPMENT		
16-30TSW10-1	0816-LP-300-3510	CONTROL SET DRONE MULTIPLE AN/TSW-10(V) ORGANIZATION
16-35S566-1	0816-LP-300-8510	ELECTRICAL EQUIPMENT SHELTER S-566/TSW-10(V) AND C
16-30ALM253-1	NONE	COUNTERMEASURES TEST SET AN/ALM-253
16-30DPM26-1	0816-LP-619-6000	TRANSPONDER TEST SET AN/DPM-26 P/N 407663-1
16-30DRM19-1	0816-LP-075-9000	TEST SET, RADIO, AN/DRM-19 (BABCOCK), OPER AND SREV. INSTR. W/IPB

Figure 5-1-5. List of Target Technical Publications (Cont'd)

TARGET SYSTEM	APPLICABLE TECHNICAL PUBLICATIONS	
SUPPORT EQUIPMENT (Cont'd)		
PUBNO	NSN	TITLE
16-30DRM20-1	0816-LP-075-9500	GENERATOR, SIGNAL AN/DRM-20 #BABCOCK#, OPER, SERV
16-30DRM29-1	0816-LP-203-4020	TEST SET, AN/DRM-29 (XAN-1) TRANSPONDER SET,
16-30GSQ228-1	0816-LP-629-0000	MISS DISTANCE ANALYZER SET OPERATION INSTRS
16-30GSQ228-2	0816-LP-004-9460	MISS DISTANCE ANALYZER SET IPB INTERMEDIATE W/IPB
16-30USM416-1	0816-LP-353-9500	TEST SET TARGET DRONE AN/USM-416, INTERMEDIATE
16-30USM417-1	0816-LP-352-4010	TEST SET TARGET DRONE AN/USM-417, INTERMEDIATE
16-30USM418-1	0816-LP-354-0010	TEST SET TRANSPONDER SET AN/USM-418, INTERMEDIATE
16-35DSQ50-1	0816-LP-004-8320	PREFLIGHT TEST SET OPER/INTER MAINT INSTRS W/IPB
16-35DSQ50-2	0816-LP-006-8240	MISS DISTANCE SENSOR TEST SET AN/TSM-195
16-45-2404	0816-LP-303-1010	TRANSPONDER GROUP OX-46/D (VEGA MODEL 656-18)
16-45-2649	0816-LP-324-0500	SIMULATOR, MODEL 617X-1 RADAR (VEGA) HANDBOOK OF
16-45-6157-1	0816-LP-560-8000	RADAR TRACKING AND CONTROL SYSTEM PORTABLE 6157,
16-45-6157-4	0816-LP-560-8500	RADAR TRACKING AND CONTROL SYSTEM PORTABLE, IPB
17-15CF-132-1	0817-LP-007-2320	VDA DKW-3 TEST ADAPTER IPB INTERIM MAINT
17-20GX-73	NONE	AERIAL TARGET TEST SET INSTRUMENT CALIBRATION PROCEDURE
AG-000TZ-MMM-000	0816-LP-605-2000	TARGET DRONE TEST SET AN/USM-614
16-30TTU384-1	0816-LP-370-4500	TEST SET TARGET SYSTEM AN/TTU-384/E (NORTHROP)
16-30USW4-1	0816-LP-300-3010	CONTROL SET DRONE AN/USW-4 P/N 01P07664G001 ORGANIZATIONAL
16-35AM6830-1	0816-LP-300-5510	AMPLIFIER ELECTRONIC CONTROL AM-6830/TSW-10(V) INT
17-15-85	0817-LP-298-5000	TEST SET IFF TRANSPONDER MODEL 683-1 P/N 405948-1
RMK		
01-40AV-75A1-2	0801-LP-013-3785	TOW TARGET LAUNCHER SYSTEM
17-15-86	0817-LP-302-8000	TEST SET TOW TARGET CONTROL A/E24T-143 (MARQUARDT)
19-1-74	0819-LP-000-8010	GROUND HANDLING EQUIPMENT BQM-34 TARGET
19-15BD-5	0819-LP-058-7500	SPOOL MOUNTING, REELING MACHINE LAUNCHER MTU-64/E
28-10A-11	0828-LP-000-6010	TOW TARGET, OPER AND MAINT INSTRS W/IPB

Figure 5-1-5. List of Target Technical Publications (Cont'd)

TARGET SYSTEM	APPLICABLE TECHNICAL PUBLICATIONS	
RMK (Cont'd)		
PUBNO	NSN	TITLE
28-10A-13	0828-LP-000-9000	TOW TARGET, LAUNCHING-REELING MACHINE SET, ORG, INTER & DEPOT MAINT INSTR. W/IPB
28-10A-14	0828-LP-001-1000	TOW SYSTEM, EXTERNAL GUNNERY, TYPE A/A 37U-15A, MAINT INSTR. W/IPB
28-10A-16	0828-LP-001-1530	MACHINE LAUNCHER SYSTEM TOW TARGET REELING A/A47U-3
28-10A-19	0828-LP-001-3510	TARGET, AERIAL TOW TDU-10B P/N 59H90730, ORG LEVEL MAINT W/IPB
28-10A-21	0828-LP-001-5040	TOW TARGET REELING MACHINE LAUNCHER SYS
28-10A-23	0828-LP-001-7010	AERIAL TOW TARGET TDV-32A/B TDV-32B/B
28-10A-24	0828-LP-001-7500	AERIAL TOW TARGET TDU-34/A, MAINT INSTRS W/IPB ORG LEVEL
28-10A-501	0828-LP-000-6540	OPERATION & SERVICE INSTRS AERIAL TOW TARGET & ASSOCIATED EQUIPMENT ORG. & INTER. MAINT.
28-10A-504	0828-LP-000-8000	MECHANISM ASSY, TOW-TARGET RELEASE (NORTH AMERICAN) OVERHAUL INSTR. W/IPB
28-10A-505	0828-LP-001-8500	CONTROL SET TOW TARGET (NAVAL AIR DEV CTR) INTER MAINT INSTR W/IPB
28-10A-506	0828-LP-015-0000	CONTROL SET TOW TARGET A/A24U-22 TE 23010-1 INTER MAINT INSTR W/IPB
28-10A-507	0828-LP-002-1000	CONTROL SET, TOW TARGET INTER MAINT W/IPB
28-600-1-6-1	0828-LP-001-2510	TOW TARGET REELING MACHINE LAUNCHER SYSTEM A/A47U-3 PREOPERATIONAL MRC
28-600-1-6-2	0828-LP-001-2010	TOW TARGET REELING MACHINE LAUNCHER SYSTEM A/A47U-4 CALENDER MRC
28-600-2-6-1	0828-LP-001-5500	MACHINE LAUNCHER SYSTEM TOW TARGET REELING A/A47U-4 PREOPERATIONAL MRC
28-600-2-6-2	0828-LP-001-6000	MACHINE LAUNCHER SYSTEM TOW TARGET REELING A/A47U-4 CALENDER MRC
28-600-3-6-1	0828-LP-002-0010	TOW TARGET REELING MACHINE LAUNCHER SYS A/A47U-4 SPECIAL MRC

Figure 5-1-5. List of Target Technical Publications (Cont'd)

TARGET SYSTEM	APPLICABLE TECHNICAL PUBLICATIONS	
VANDAL		
PUBNO	NSN	TITLE
01-MQM8-1	0801-LP-260-6520	VANDAL TARGET (MQM-8G/8G-ER/8G-EER/8X) INTERMEDIATE MAINT INSTR W/IPB
11-75A-513	0811-LP-009-7140	VANDAL LAUNCH SYSTEM
16-30JX250-1	0816-LP-007-4330	VANDAL GUIDANCE CONTROL SYSTEM P/N JX250-702/892
16-30JX253-1	0816-LP-208-5520	VANDAL FIELD TEST STATION OPERATIONAL/INTERMEDIATE
19-20-1	0819-LP-073-4010	VANDAL BATTERY CONDITIONER JX258-27 O/I MAINTENANCE
19-95-4	0819-LP-073-3500	CART VANDAL LOADER P/N JX250-792 (ALLIED CORP),
SEABORNE TARGETS		
01-QST33-1	0801-LP-345-4500	TARGET SEABORNE POWERED QST-33 ORGANIZATIONAL AND INTERMEDIATE MAINT INSTR W/IPB
01-QST33-2	0801-LP-522-1000	TARGET QST-33 SEABORNE POWERED REMOTE AND MANNED
01-QST33-6-1	0801-LP-344-2010	PREOPERATIONAL CHECKLIST SEABORNE POWERED TARGET
01-QST33-6-2	0801-LP-344-3500	SEABORNE POWERED TARGET QST-33 (UNIFLITE INC)
01-QST35-1	0801-LP-522-1500	TARGET BOAT QST-35, TARGETS SEABORNE POWERED
01-QST35-2	0801-LP-522-2500	SEABORNE POWERED TARGET QST-35 OPERATORS MA REMOTE
01-QST35-6-1	0801-LP-344-3000	POWERED TARGET QST-35 SEABORNE, PRE-OPERATIONAL
01-QST35-6-2	0801-LP-634-9482	SEABORNE POWERED TARGET MODEL QST-35 (UNIFLITE)
AW-820AA-MIB-010	0811-LP-048-1500	TARGET FLOATING AT SEA (FAST) OPER AND MAINT W/IPB
QLT		
01-QLT1-1	NONE	MOBILE LAND TARGET OPER & MAINT INSTR W/IPB

Figure 5-1-5. List of Target Technical Publications (Cont'd)

5.1.10.5 The NAVSEALOGCEN provides feedback information to reporting activities and data to various agencies higher in the chain of command through the central-external cycle. These agencies may include the Chief of Naval Operations, type commanders, systems commands, system command field agencies, contractors, and others who are dependent upon factual and comprehensive maintenance data as a basis for sound command and management decisions.

5.1.11 Auxiliary/Augmentation Systems. Auxiliary/Augmentation Systems provides realistic threat simulation for weapon system research, development, test and evaluation, and fleet training. Each target may be augmented by a variety of Auxiliary/Augmentation Systems, which consist of a variety of equipment that are common to more than one target vehicle. Auxiliary/Augmentation Systems enable target configuration flexibility in accordance with specific individual mission requirements. Auxiliary/Augmentation Systems generally perform the following types of functions: command and control, location and identification, navigation, scoring, radar augmentation, electronic countermeasures, active emitters, and infrared augmentation. Target maintenance activities are authorized to hold Auxiliary/Augmentation Systems equipment applicable to the targets they support. Some Auxiliary/Augmentation Systems units are interchangeable. After identification of a Auxiliary/Augmentation Systems requirement, maintenance personnel install the applicable Auxiliary/Augmentation Systems in accordance with applicable technical manuals to satisfy mission requirements. Auxiliary/Augmentation Systems equipment is installed and removed in accordance with the applicable authorized maintenance instruction manual or maintenance requirement card. Figure 5-1-7 depicts a matrix of Auxiliary/Augmentation Systems equipment by target system.

5.1.11.1 AN/DKW-2A ITCS Transponder. The AN/DKW-2A analog interface transponder is used in targets to receive and decode digital commands on a frequency modulated up-link while simultaneously encoding and transmitting digital telemetry on a phase-modulated down-link by radio frequency.

5.1.11.2 AN/DKW-3 ITCS digital interface Transponder. The AN/DKW-3A/3B transponder is used in targets to receive and decode digital commands on a frequency modulated up-link while simultaneously encoding and transmitting digital telemetry on a phase-modulated down-link. Radio frequency is transmitted and received from a remotely located control set.

5.1.11.3 AN/DKW-4(V)1 a Target Control Transponder Set. The AN/DKW-4(V)1 target control transponder set is the airborne portion used with the model 6157 Portable Radar Tracking and Control System.

5.1.11.4 AN/DRW-29 Radio Receiver Set. The AN/DRW-29 radio receiver set is used in remotely controlled targets to receive and decode signals transmitted from a control transmitter to maneuver and control functions on the target.

5.1.11.5 AN/DPN-88 Identification Friend or Foe Transponder. The AN/DPN-88 identification friend or foe transponder is a radar enhancement device.

5.1.11.6 AN/DPN-90(V)1 G-Band Beacon. The AN/DPN-90(V)1 beacon is a radar transponder used to enhance radar tracking.

5.1.11.7 AN/DPN-90(V)2 I-Band Beacon. The AN/DPN-90(V)2 beacon is a radar transponder used to enhance radar tracking.

5.1.11.8 T-1438/D Locator Beacon Transmitter. The T-1438/D locator beacon is a radio frequency transmitter used as a positive identifying and locating device for aerial targets during the recovery phase of an operation.

5.1.11.9 RT-1378/Z Radar Altimeter. The RT-1378/Z radar altimeter is a high resolution device which measures altitude from 0 to 5,000 feet. The output of this device is fed into the autopilot of the target to control the altitude of low flying targets.

5.1.11.10 AN/APN-194 Radar Altimeter. The AN/APN-194 radar altimeter receiver-transmitter is a high-resolution device which measures altitude from 0 to 5,000 feet. The output of this device is fed into the autopilot of the target to control the altitude of low flying targets.

5.1.11.11 AN/DSQ-37 Miss-Distance Indicator The AN/DSQ-37 miss-distance indicator, commonly referred to as a scorer, is a noncooperative scoring device. It is used to measure the distance that a missile or projectile misses the target.

5.1.11.12 AN/DRQ-4B Miss-Distance Indicator The AN/DRQ-4B miss-distance indicator, commonly referred to as a scorer, is a cooperative scoring device. It is used to measure the distance that a missile misses the target. The AN/DRQ-4B scoring range is 2,000 feet.

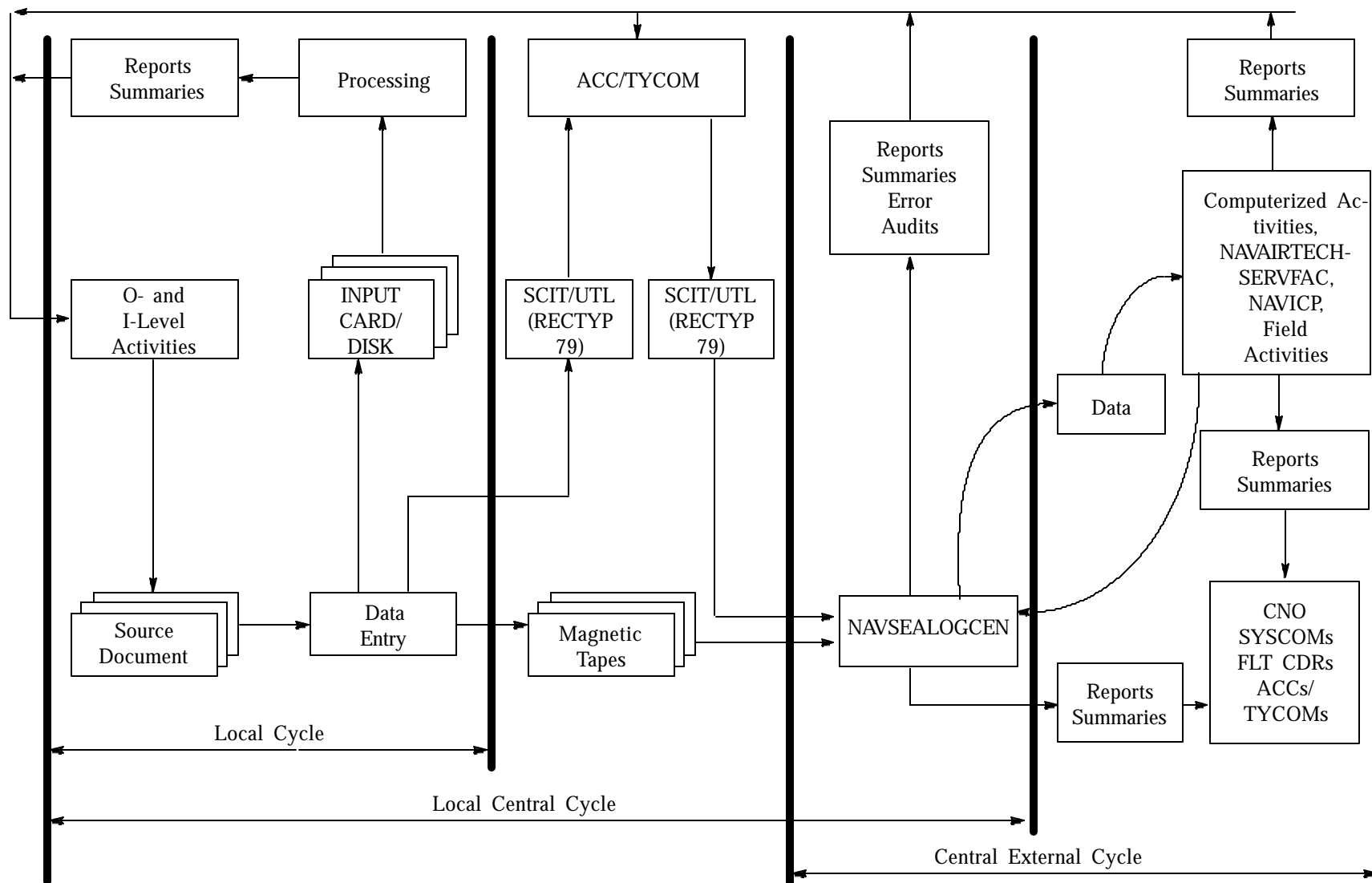


Figure 5-1-6. 3M Data Cycle

Auxiliary/Augmentation Systems	BQM-34	BQM-74	AQM-37	MQM-8G/ER/EER	QF-4	QLT-1C
AN/DKW-2A ITCS Transponder	X ₁					
AN/DKW-3 ITCS Transponder	X ₂	X			X	
AN/DKW-4 Target Control Transponder Set						
AN/DRW-29 Radio Receiver Set	X					X
AN/DPN-88 IFF Transponder	X	X	X			
AN/DPN-90(V)G Band Beacon	X	X	X	X	X	
AN/DPN-90(V) I-Band Beacon	X	X	X	X	X	
T-1438/D Locator Beacon Transmitter	X	X				
RT-1378/Z Radar Altimeter		X				
AN/APN-194 Radar Altimeter	X			X		
R2540(V)/DRW Command Destruct Receiver			X	X	X	
AN/DSQ-37 Scorer	X	X		X	X	
AN/DRQ-4B Scorer	X	X	X	X	X	
AN/DLQ-3C EMC Set	X				X	
AN/ULQ-21 EMC Set	X	X ₃		X ₃	X	
AN/DLQ-8 Shot Pod Countermeasure	X				X	

NOTES:

1. BQM-34S-41 ONLY
2. BQM-34S-49 AND 51
3. Special Configurations only

Figure 5-1-7. Auxiliary/Augmentation Systems

Auxiliary/Augmentation Systems	BQM-34	BQM-74	AQM-37	MQM-8G/ER/EER	QF-4	QLT-1C
AN/ALE-44 Chaff Dispenser	X					
AN/DPT-1(V) Radar Simulator	X			X		
AN/DPT-2 Radar Simulator		X			X	
AN/UPT-2 Radar Simulator	X					
AN/DSQ-50 Scoring Sensor	X	X	X	X	X	
AN/DSQ-57 Scoring Sensor					X	
Smoke System	X	X				
Strobe Light	X					
Thermic Pot	X	X				
MK 28 MOD 3 Flare		X				
MK 37 MOD 0 Flare	X					
Traveling Wave Tube	X			X		
Solid State Amplifier C, E, F, G, I, and J Bands	X	X	X			
Passive Augmentation Corner Reflector					X	
Passive Augmentation Luneburg Lens	X	X			X	

NOTES:

1. BQM-34S-41 ONLY
2. BQM-34S-49 AND 51
3. Special Configurations only

Figure 5-1-7. Auxiliary/Augmentation Systems (Cont'd)

5.1.11.13 AN/ULQ-21 Electronic Countermeasures Set. The AN/ULQ-21 electronic countermeasures set is used as a noise and deception jamming system. The electronic countermeasures set simulates a realistic environment for test and evaluation of a weapon system and is also used for training.

5.1.11.14 AN/ALE-44 Countermeasures Dispensing Set. The AN/ALE-44 countermeasures dispenser set is used on full scale or subscale aerial targets to dispense radar reflective chaff or infrared flares to create false targets which confuse radar detection.

5.1.11.15 AN/DPT-1 Radar Transmitting Set. The AN/DPT-1 radar transmitting set, commonly known as the radar simulator, is a radio frequency emitter used to simulate threat signals and antiship cruise missile homing radar. With selection of three interchangeable magnetrons, H-, I-, or J-bands can be provided.

5.1.11.16 AN/DPT-2 series Radar Transmitting Set. The AN/DPT-2 series radar transmitting set, commonly known as the radar simulator, is a pulse modulated radar simulator that is usable in land, air, or sea environments. It is used in targets to provide simulated threat radar signals for test and evaluation of weapons systems.

5.1.11.17 AN/DPT-2A Radar Transmitting Set. The AN/DPT-2A radar transmitting set, commonly known as the radar simulator, is a radio frequency emitter used to simulate radar signals. The AN/DPT-2A offers the user an increased power and frequency capability which can be adapted to simulate additional anti-ship missile capabilities.

5.1.11.18 AN/DSQ-50 Miss Distance Sensor Set. The AN/DSQ-50 miss distance sensor set is the onboard component of the AN.USQ-104 scoring system. It provides scoring information on passing projectiles and missiles.

5.1.11.19 AN/DSQ-57 Advanced Radar Missile Scorer (ARMS). The AN/DSQ-57 advanced radar missile scorer provides air-to-air missile/target vector scoring performance data. It is designed to accommodate mission profiles which require data encryption.

5.1.11.20 R-2540(V)/DRW Command Destruct Receiver. The Command Destruct Receiver is a solid state FM VHF

receiver/decoder which provides the capability to monitor the command link, to arm the target destruction device, to command destruction, and to separate instructions for concurrent operations with more than one target.

5.1.11.21 Smoke System. The smoke system used in a drone target will provide a continuous or interrupted trail of smoke. The trail of smoke is positive identification for aircraft interception and for location and observation of targets in flight.

5.1.11.22 Strobe Light. The strobe light is used to visually track targets during periods of low visibility and to facilitate night recovery.

5.1.11.23 Thermic Pot. The thermic pot is an infrared source that is used when a long-duration clean signal is desired.

5.1.11.24 MK 28 MOD 3 Flare. The MK 28 MOD 3 target flare is used to provide an infrared source on the BQM-74C/E target during missile firings.

5.1.11.25 MK 37 MOD 0 Flare. The MK 37 MOD 0 target flare is used to provide an infrared source on BQM-34S targets to enhance survivability of the target missile firings.

5.1.11.26 Traveling Wave Tube. The traveling wave tube is used to increase radar reflectivity of a target. The augmented target provides a realistic target for a missile fire control system.

5.1.11.27 Solid State Amplifier (E-, F-, G-, I-, and J-Bands). The solid state amplifier is used to increase radar reflectivity of a target and provide a more realistic target for missile systems.

5.1.11.28 Passive Augmentation Corner Reflector. The corner reflector is a passive radar augmentation device used to increase the radar reflectivity of a target without use of additional energy.

5.1.11.29 Passive Augmentation Luneburg Lens. The lens is a passive radar augmentation device. It is used to increase the radar reflectivity of a target without the use of additional energy.

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CHAPTER 5.2

Organizational Level Maintenance

5.2.1 General. This chapter discusses organizational level target maintenance actions performed by designated activities listed in figure 5-2-1. Organizational level maintenance is performed by maintenance personnel assigned to target maintenance activities. Volume I, chapter 2.3 of this manual describes the objectives and structure of these activities. Organizational level maintenance directly supports and maintains the target systems and equipment assigned to designated target maintenance activities.

5.2.2 Organizational Level Maintenance Responsibilities

5.2.2.1 Organizational level maintenance actions are tailored within the constraints of the organizational level's manpower and maintenance capabilities to ensure that assigned target systems and equipment are properly maintained. It is intended that each maintenance task be performed at the level of maintenance which will ensure optimum economical use of material, manpower, and fiscal resources. When maintenance is beyond the capability of the custodian, it will be accomplished by the activity or department more capable of accomplishing the specific maintenance action. To determine the extent to which a repair task can be undertaken, the maintenance activity must consult the appropriate Maintenance Instruction Manual (MIM), operating or service instruction, or technical directives that pertain to each item of equipment. Organizational level maintenance actions performed on target systems and equipment include scheduled and unscheduled maintenance, time-phased and event-phased inspections, cleaning, minor corrosion control, and servicing. Scheduled and unscheduled maintenance actions are defined below:

a. **Scheduled Maintenance Requirements.** Scheduled maintenance is performed utilizing Maintenance Requirement Cards (MRC). MRCs are generated from the applicable MIM and are provided to facilitate a maintenance program for each target system or equipment. MRCs identify the maintenance tasks required to maintain an equipment in an effective operating condition and are arranged sequentially by work area and system. Scheduled maintenance requirements ensure timely discovery and correction of defects and consist of specific inspections contained in the applicable authorized MRCs. Reporting custodians may in-

crease the depth and frequency of any scheduled inspection, require additional inspections whenever excessive time has elapsed between inspections, or when environmental or operational conditions are considered to have impaired the material reliability or integrity of the equipment. Inspections performed to a greater depth or at an increased frequency are logged, if required, as the type which would normally be performed and do not alter the schedule of the programmed inspections.

b. **Unscheduled Maintenance Requirements.** Unscheduled maintenance is the maintenance required to correct discrepancies and deficiencies found during operations or scheduled maintenance. Unscheduled maintenance consists of fault isolation (troubleshooting), repair, replacement, and test.

5.2.2.2 Figure 5-2-1 assigns the organizational level maintenance actions that are performed on the targets listed in volume II, chapter 5.1. These assigned maintenance actions are described generally in paragraphs 5.2.2.2.1 through 5.2.2.2.19. All maintenance actions are to be performed in accordance with the applicable authorized Naval Air Systems Command maintenance plan, technical manuals, loading manuals, checklists, and MRCs which have been developed for each target system and launch platform.

5.2.2.2.1 Prelaunch Inspection. Organizational level maintenance personnel perform a prelaunch inspection prior to each launch to ensure the integrity of the equipment for operation and to determine the need for servicing. These inspections verify through visual or functional inspection that a target is properly serviced and ready-for-use. All prelaunch inspections are conducted in accordance with the applicable authorized MRCs.

5.2.2.2.2 Postlaunch Inspections. Organizational level maintenance personnel perform a postlaunch inspection after each target recovery to detect damage or material degradation which may have occurred during the launch and to determine the need for servicing and required maintenance and testing necessary to return the target to an operationally ready condition. All postlaunch inspections are conducted in accordance with the applicable authorized MRCs.

Target Type	5.2.2.2.1 Prelaunch Inspection	5.2.2.2.2 Postlaunch Inspection	5.2.2.2.3 Conditional Inspection	5.2.2.2.4 Acceptance Inspection/ Initial Buildup	5.2.2.2.5 Transfer Inspection	5.2.2.2.6 Phased Inspection	5.2.2.2.7 Calendar Inspection	5.2.2.2.8 Rehabilita- tion Inspection	5.2.2.2.9 Corrosion Control/ Preservation	5.2.2.2.10 Bench Check/ Test
BQM-34	X	X	X	X	X			X	X	X
BQM-74	X	X	X	X	X			X	X	X
AQM-37	X		X	X	X				X	X
MQM-8G/ER/ EER	X		X	X	X				X	X
QF-4	X	X	X	X	X	X			X	X
QLT-1C	X	X	X	X	X			X	X	X
RMK-19/ A47U-3	X	X	X	X	X		X		X	
RMK-31/ A47U-4	X	X	X	X	X		X		X	
TDU-32A/B	X	X	X	X	X			X	X	
TDU-34A/A	X	X	X	X	X			X	X	

Figure 5-2-1. Organizational Level Maintenance Responsibilities for Target Systems

Target Type	5.2.2.2.11 Component/ Installation/ Removal	5.2.2.2.12 Stray/No Voltage Checks	5.2.2.2.13 Release and Control Checks	5.2.2.2.14 Target Arming	5.2.2.2.15 Target Darming	5.2.2.2.16 Technical Directives	5.2.2.2.17 Local Eng. Changes	5.2.2.2.18 Discrepancy Reporting	5.2.2.2.19 Record Keeping/ Reporting
BQM-34	X	X	X	X	X	X	X	X	X
BQM-74	X	X	X	X	X	X	X	X	X
AQM-37	X	X	X	X	X	X	X	X	X
MQM-8G/ER/ EER	X	X		X	X	X	X	X	X
QF-4	X	X	X	X	X	X	X	X	X
QLT-1C	X					X	X	X	X
RMK-19/ A47U-3	X	X		X	X	X	X	X	X
RMK-31/ A47U-4	X	X		X	X	X	X	X	X
TDU-32A/B	X	X				X	X	X	X
TDU-34A/A	X	X		X	X	X	X	X	X

Figure 5-2-1. Organizational Level Maintenance Responsibilities for Target Systems (Cont'd)

5.2.2.2.3 Conditional Inspection. A conditional inspection is an unscheduled inspection required as a result of a specific overlimit condition. Conditional inspections are performed by organizational maintenance personnel and include tests and inspections to determine the condition of the target after handling incidents, droppage, aborted launches, or hot starts. All conditional inspections are conducted in accordance with the applicable authorized MRCs or MIM.

5.2.2.2.4 Acceptance and Initial Buildup Inspections. Acceptance inspections consist of those inspections performed when a reporting custodian accepts a newly assigned target. The inspection includes an inventory of all equipment listed in the target inventory record, a configuration verification, testing and servicing requirements, and initial buildup necessary to place the target in an operational status. Activities may elect to increase the depth of inspections if the equipment condition indicates that such action is warranted. All acceptance and initial buildup inspections are conducted in accordance with the applicable authorized MRCs. Items which are under manufacturer's warranty may be inspected only to the extent allowed by the warranty provisions as specified in the applicable Naval Air Systems Command (NAVAIRSYSCOM) technical publications or other appropriate directives.

5.2.2.2.5 Transfer Inspections. Transfer inspections are conducted in accordance with the applicable authorized MRCs and are basically the same as acceptance inspections, except that they are conducted by the reporting custodian who is transferring the target. Transfer inspections are performed by organizational level maintenance personnel and include a configuration verification and an inventory of all records and components that make up the target inventory record. Some targets also require disassembly and crating as part of the transfer inspection. Activities may elect to increase the depth of any transfer inspection if the equipment condition indicates that such action is warranted. The transferring activity is responsible for ensuring that all logbooks, records, and forms are updated, completed, and forwarded to the activity that is accepting the target.

5.2.2.2.6 Phased Inspections. Phased inspections are comprised of a series of related inspections performed by organizational level maintenance personnel at specific intervals. The inspections are the result of dividing the maintenance requirements into small packages containing approximately the same workload. All phased inspections are conducted in accordance with the applicable authorized MRCs.

5.2.2.2.7 Calendar Inspections. Organizational level maintenance personnel conduct calendar inspections to check for material degradation which may have occurred

during the preceding calendar interval. It provides an opportunity to perform essential preventive maintenance to a greater depth than during any other inspection. All calendar inspections are conducted in accordance with the applicable authorized MRCs.

5.2.2.2.8 Rehabilitation Inspections. Target rehabilitation inspections are postlaunch inspections that are considered to be at calendar depth. This inspection is conducted by organizational level maintenance personnel to determine any degradation or damage that may have occurred during a mission and to perform necessary rehabilitation, including testing and servicing, to return the target to an operational status. Rehabilitation includes disassembly, decontamination, corrosion control, visual inspection, repair of operational and retrieval damage, correction of discrepancies, bench testing of components, reassembly of the target, and complete system testing. All rehabilitation inspections are conducted in accordance with the applicable authorized MRCs.

5.2.2.2.9 Corrosion Control and Preservation. Organizational level maintenance personnel perform routine corrosion control inspections on targets and Aircraft Armament Equipment (AAE) in the activity's custody. Minor corrosion discovered during inspections can be removed using preventive maintenance procedures. The procedures normally consist of cleaning, light sanding of surface corrosion, treating, priming, and touchup painting. Corrosion control is mandatory and shall be performed on a scheduled basis as required to maintain the protective envelope on the target and not merely for cosmetic purposes. Corrosion procedures for MQM-8G/ER/EER have to be performed in accordance with Allied Signal Procedures MIS-SE-3000 (Handling and Processing of TALOS and VANDALS Thorium/Magnesium Missile Parts) due to personnel hazards from radioactive alloys used in the VANDAL targets. All corrosion control procedures will be performed in accordance with NAVAIR 01-1A-75 (Airborne Weapons Associated Equipment, Consumable Material Applications and Hazardous Material Authorized Use List) (NOTAL) for all targets except targets QF-4, and for target peculiar support and avionics equipment; NAVAIR 01-1A-509 (Aircraft Cleaning and Corrosion Control for Organizational and Intermediate Level Maintenance) (NOTAL) for full size converted tactical aircraft; NAVAIR 17-1-125 (Support Equipment Cleaning, Corrosion Control Manual) (NOTAL) for common support equipment; NAVAIR 17-35FR-01/NAVAIR 16-1-540 (Avionics Cleaning Corrosion Prevention/Control) (NOTAL) for common avionic test and measurement equipment; and NAVAIR 15-01-500 (Preservation of Naval Aircraft) (NOTAL).

5.2.2.2.10 Bench Check and Test. Bench test is the subjection of target engines, accessories, equipment, and equipment to prescribed conditions and specifications with the use of shop test equipment to ensure proper functioning in accor-

dance with predetermined requirements. A bench check consists of a physical inspection or functional test of an item removed due to an alleged malfunction. Through the bench check, organizational level maintenance personnel determine if the part or item is serviceable or repairable. The bench check also includes a determination of the maintenance, repair, or possible overhaul required to return the target to serviceable status. All bench checks and tests are performed in accordance with the applicable authorized MIM.

5.2.2.2.11 Component Installation and Removal. Organizational level maintenance personnel are responsible for performing corrective maintenance to return repairable items to service. Such maintenance is normally accomplished on targets, aerial tow reeling machines and launchers, and target control sets. It consists of replacing defective parts, assemblies, circuit cards, electrical and electronic parts and the repair and testing of material and components in accordance with the applicable authorized MIM.

5.2.2.2.12 Stray/No Voltage Checks. Stray/no voltage checks must be performed prior to installing any explosive device in targets or aircraft launching equipment. Verification is accomplished by using the applicable authorized airborne weapons and stores loading manual. Any noted discrepancies must be corrected and a complete recheck performed before installing explosive devices.

5.2.2.2.13 Release and Control System Checks. Organizational level Integrated Weapons Team (IWT) members perform release and control checks to functionally test aircraft electrical and mechanical target or control subsystem. Checks must be performed daily prior to target and stores loading, after reconfiguration of the target and aircraft, after any malfunction in the release and/or control system, and prior to launch. Checks will be performed on turnaround if time and operational commitments permit; however, target launchers must be dearmed and safety pins installed prior to performing release and control system checks. Procedures for performing release and control system checks are contained in the applicable authorized airborne weapons and stores loading manual for each target and aircraft.

5.2.2.2.14 Target Arming. Arming procedures performed prior to launch transform a target or launcher from a safe condition to the armed condition. Organizational level maintenance personnel perform target arming in authorized arming areas. During arming operations, personnel remove safety pins, position safe and arm levers to the arm position, perform stray/no voltage tests, and arm systems. Procedures are issued by the applicable airborne weapons and stores loading manual for each target and aircraft.

5.2.2.2.15 Target Darming. Postoperational dearming procedures transform a target or launcher from the armed condition to a safe condition. Darming procedures are performed prior to download and during turnaround evolutions. Organizational level maintenance personnel perform dearming procedures in an authorized dearming area in accordance with the applicable airborne weapons and stores loading manual for each target and aircraft.

5.2.2.2.16 Technical Directives. Technical directives are issued by the Naval Air Systems Command to provide technical information necessary to properly and systematically inspect or alter the configuration of target systems or equipment subsequent to establishment of each respective baseline configuration. Technical directives include all types of changes and bulletins and consist of information that cannot be disseminated satisfactorily by revision to technical manuals. Organizational level maintenance personnel are responsible for assuring that modification or one-time inspection of equipment in the activity's custody is accomplished when technical directives are issued.

5.2.2.2.17 Local Engineering Changes. Local Engineering Changes (LECs) are developed when aerial target or decoy baseline configurations are temporarily changed to meet unique local Naval Air Warfare Center Weapons Division (NAVAIRWARCENWPNDIV) or off-site user requirements. LECs are not required when a target is to be flown for test and evaluation (T&E) of the target system and when the modification was designed, fabricated, and integrated wholly by the target manufacturer. LECs are processed in the same manner as Class I Engineering Change Proposals by the NAVAIRWARCENWPNDIV Threat/Target Systems Department Targets Change Review Board (TCRB) and are approved by the NAVAIRWARCENWPNDIV TCRB Chairperson. Instructions for LEC preparation are contained in the TCRB document Target Systems Procedures for Developing Local Engineering Changes of October 1996. Although LECs are developed to temporarily change an aerial target or decoy baseline configuration, they may be used at various operational sites or for more than one operation if it is deemed that a permanent change to the baseline configuration is not required. The authority to export LECs to activities outside NAVAIRWARCENWPNDIV resides with the NAVAIRWARCENWPNDIV TCRB.

5.2.2.2.18 Discrepancy Reports. Discrepancy reports are initiated at the organizational level when a discrepancy is discovered during the performance of any of the assigned organizational level maintenance actions. Discrepancy reporting procedures are contained in volume I, chapter 4.6. The Product Quality Deficiency Report (PQDR) program provides target activities with a method for reporting deficiencies in new or newly reworked targets or target components which may be attributable to non-conformance of

contractual or specification requirements or substandard workmanship. Targets and/or target components under warranty are considered to be new material for PQDR purposes. In the event that a deficiency is discovered during the processing of a new or newly reworked target or component that is under warranty, and that deficiency is not a result of maintenance handling or processing, the item shall be considered to be in breach of warranty of the contract and is therefore subject to the provisions of the warranty. Warranty claim actions shall be handled as follows:

a. A PQDR form (SF 368) will be used to process warranty claim actions. The SF 368 will be clearly marked "Warranty Claim Action" and will include the following (in addition to information required in Volume I, Chapter 4.6):

- (1) Date of failure (Block 4).
- (2) Item serial number (Block 9).
- (3) Production contract number (Block 10).
- (4) Warranty expiration date (Block 22).
- (5) Detailed circumstances leading to discovery of failure (Block 22).

(6) When in doubt as to whether the item is still under warranty (new or newly reworked), submit the completed PQDR checking "Unknown" in block 19a of the SF 368, and forward to the Screening Point. The Screening Point will check for validity and completeness, and continue to process the document as a valid PQDR, and EI, etc.

b. In addition to normal distribution, a copy of the completed PQDR and logbook/section will be placed in the container with the failed item and the item will be returned to the vendor for repair under the warranty provisions of the contract. A copy of the PQDR will be sent to COMNAVAIRSYSCOM (AIR-3.1.3) Assistant Program Manager, Logistics responsible for the item. Discrepancy reports will be prepared and submitted by target activities in accordance with Naval Aviation Maintenance Discrepancy Reporting Program (NAMDRP) procedures. Target systems and equipment discrepancy reports peculiar to missile targets shall be documented in accordance with this instruction. Aircraft system discrepancy reports peculiar to aircraft target drones (QF-4N) shall be documented in accordance with discrepancy reporting procedures as prescribed in OPNAVINST 4790.2H (NOTAL).

5.2.2.2.19 Record Keeping and Reporting. Organizational level maintenance activities are responsible for maintaining target logbooks, engine logbooks, target discrepancy books, target performance reports, and the Visual Informa-

tion Display System/Maintenance Action Form (VIDS/MAF) as described below.

a. Target Logbooks. All activities that have reporting custody of target systems shall maintain target logbooks and associated records for their assigned target systems in a proper and up-to-date status. Target logbooks provide a history of maintenance, operation, and configuration control of the target. The logbook is a hard cover, looseleaf ring binder containing separators and page insert forms. Logbook should be maintained digitally and a disk provided with logbook. The original accepting activity, upon acceptance of the target, will initiate the target logbook. The logbook is kept in the maintenance or production control office. Any classified logbook information shall be safeguarded in accordance with applicable security regulations. When the target is transferred, the logbook is transferred with the target. The logbook will be brought up-to-date before the transfer. The logbook will be kept neat and clean and entries will be printed in black ink (no felt-tipped pens will be used) or typewritten. The following pertain to aerial subscale and land targets only. All full scale target logbooks will be maintained using the criteria for aircraft specified in OPNAVINST 4790.2H (Naval Aviation Maintenance Program) (NOTAL). The target logbook will contain at least the following records:

(1) Equipment Operating Record (OPNAV 4790/31A). Appendix H depicts an example of the equipment operating record.

(2) Inspection Record (OPNAV 4790/22A). Appendix H depicts an example of the inspection record.

(3) Technical Directives (OPNAV 4790/24A). Appendix H depicts an example of the technical directive form.

(4) Miscellaneous/History (OPNAV 4790/25A). Entries shall be made to reflect historical data for which there is no special provision. Appendix H depicts an example of the record.

(5) Preservation/Depreservation Record (OPNAV 4790/136A). Appendix H depicts an example of the preservation and depreservation record.

b. The Engine Logbook. The engine logbook must retain manufacturer's engine test parameters in the manila envelope located in the back of the logbook and will contain the following records:

(1) Aeronautical Equipment Service Record (AESR) (OPNAV 4790/29). Appendix H depicts an example of the AESR.

(2) Equipment Operating Record (OPNAV 4790/31A). Appendix H depicts an example of the equipment operating record.

(3) Inspection Record (OPNAV 4790/22A). Appendix H depicts an example of the inspection record.

(4) Record of Rework (OPNAV 4790/23A). Appendix H depicts an example of the record of rework.

(5) Technical Directives (OPNAV 4790/24A). Appendix H depicts an example of the technical directive form.

(6) Miscellaneous/History (OPNAV 4790/25A). Entries shall be made to reflect historical data for which there is no special provision. Appendix H depicts an example of the record.

(7) Preservation/Depreservation Record (OPNAV 4790/136A). Appendix H depicts an example of the preservation and depreservation record.

c. Target Discrepancy Book. The target discrepancy book is designed to provide maintenance personnel with an accurate, comprehensive, and chronological record of all operations, discrepancies, and maintenance performed on a specific target. Maintenance control maintains a target discrepancy book for each target assigned, with the exception of tow banners and tow lines. The target discrepancy book, which is set up by target serial number, must accurately reflect the status of all pending maintenance requirements as shown on the maintenance control or workcenter Visual Information Display System (VIDS) board.

(1) Copy 4 of the VIDS/MAF is placed on the right side of the target discrepancy book where it will remain as long as the maintenance discrepancy is outstanding. When corrective action has been completed, maintenance control verifies copy 1 and transcribes applicable data to copies 3 and 4. Copy 3 is then filed on the left side of the target discrepancy book. Copy 4 is removed from the target discrepancy book and is forwarded to quality assurance for trend analysis and local use.

(2) Copy 3 remains in the target discrepancy book for a minimum of 10 operations or for the life of the target, whichever is least. When copy 3 is removed, it may be destroyed, provided a completed copy 1 has been processed and is in the historical file.

(3) Flight records on target drones are separated by the aircraft inspection and acceptance record (OPNAV 4790/141). This aircraft inspection and acceptance record

shall include the signature and rank of the maintenance officer, maintenance material control officer, or maintenance control officer and the certification date of the safe for flight condition. Other persons may sign the form if authorized and designated in writing by the commanding officer. Appendix H depicts an example of the aircraft inspection and acceptance record.

(4) Records of target operations of targets other than target drones will be separated by a locally prepared form similar to the OPNAV 4790/141. This form, titled "Target Prelaunch/Configuration/ Launch Record," will contain, as a minimum, the following blocks of information: target serial number, type equipment code, date, certified safe for launch block with date and authorized signature, and an ordnance, special equipment, and remarks block. The remarks block will be used for the purposes of configuration control and to document configuration components. Personnel authorized to sign the certified safe for launch block will be the same as those authorized to certify safe for flight condition and must be designated in writing by the commanding officer.

d. Target Performance Report (formerly OPNAV 8600/15). The individual target performance report documents target performance. These reports shall now be completed electronically in an automated web accessible database for Navy wide use. TARGETS DES is a secure web site. A username and pass word can be obtained by contacting the AWIS Access Desk at (805) 484-6565 or DSN 893-6565. To access TARGETS DES one of the following browsers must be loaded and properly configured on a personal computer. In addition, 128 encryption must be installed for the browser used. (For best performance, Internet Explorer, with the display resolution set to 800x600 (or greater) is recommended.)

(1) Internet Explorer (i.e.) 4.0 or above with 128 bit encryption.

(2) Netscape 4.0 or above with 128 bit encryption.

(3) Executable install versions and upgrades of both of these browsers can be downloaded from the Targets web site home page: <http://tercel.mugu.navy.mil/targets>.

(4) The users guide is available on this web page or on compact disc (CD) by contacting the AWIS help desk at commercial (805) 484-6512.

(5) All target operating activities are required to report on target performance whenever:

(a). A powered target is operated.

(b). A TDU-34 tow target is streamed.

(c). A previously submitted target performance report requires correction or deletion. Reports are to be completed immediately after the operation and submitted into the database within 24 hours if the target is expended and 48 hours if the target was not expended. All target performance reports are now part of the AWIS database and can be accessed electronically at the above web site.

e. Target Expenditure Reporting. Current expenditure/allocation information will be available as part of the target site on the AWIS database system at: <http://tercel.mugu.navy.mil/targets>. The expenditure database will be updated automatically based on the input of the target performance report by the operating activity. Target operating activities are still required to transmit a message report within 24 hours of a target loss, listing target, serial number, calendar date of expenditure, activity charged (SysCOM/Subclaimant/FMS), weapon system utilized/FMS case number. These messages will be addressed to NAVAIRWARCENWPNDIV Code 323210E. All aerial towed targets (TDU-32, TDU-34) data may be inputted weekly. Real time reports are now available on the web site. An automated process will download and save end of month, quarter, and year reports.

f. Inventory and Readiness Reporting. Target inventory/readiness report will now include only three categories:

- (1) Mission Capable.
- (2) Non-Mission Capable Supply.
- (3) Non-Mission Capable Maintenance.

These are defined as:

(a) Mission Capable Includes:

- (1) Targets ready for flight.
- (2) The basic target configuration is ready to be rendered capable for flight and recovery (e.g. includes airframe, ordnance, consumables, etc).
- (3) A target that is new in crate that has all necessary equipment in inventory, on-site, to render capable for flight and recovery.

(b) Non-Mission Capable Supply The target is not operationally ready because of supply (e.g. item is not on-site).

(c) Non-Mission Capable Maintenance (NMCM) The target system is not operationally ready because a maintenance action required.

(1) Start NMCM when a condition is discovered.

(2) Stop NMCM when maintenance is complete, or interrupted by supply shortage.

(3) Start NMCM when the component is provided from supply and maintenance resumes.

(4) Includes grounded targets with outstanding airframe EI's or PQDR's.

All Aerial Target and Target Auxiliary/Augmentation inventory and readiness changes shall be reported as follows:

(a) All non-deployed target operating activities with internet access shall report changes in the inventory at the close of business each day and changes in readiness condition at the end of each week.

(b) All deployed activities with internet access shall report changes in the inventory and readiness condition at the end of each week.

(c) Any target operating activity without internet access shall forward their changes in the inventory and readiness condition at the end of each week via facsimile to the database manager at DSN 351-3890 or commercial (805) 989-3890 Attention Code 323210E.

g. Target Inventory Reports. All government and contractors activities assigned custody of serialized aerial and surface targets, including tow reels and launchers, and non-serialized aerial tow targets and aerial banner tow targets shall provide their inventory and condition status into the targets database at the <http://tercel.mugu.navy.mil/targets> web site when ever:

- (1) A target is received from another activity.
- (2) A target is transferred and accepted by another activity.
- (3) A target is expended.
- (4) The readiness of a target is changed.
- (5) A target previously reported as expended is reinstated into the inventory real time reports are now available on the web site. An automated process will download and save end of the month, quarter, and year reports.

h. Target auxiliary/Augmentation System (TA/AS) and Consumable/Kit Inventory Reports. All government and contractor activities in possession of and/or assigned custody of TA/AS items and installation kits for aerial and surface targets shall provide their inventory and condition status into targets database at the: <http://tercel.mugu.navy.mil/targets> web site whenever:

(1) A TA/AS item or installation kit is received from another activity.

(2) A TA/AS item or installation kit is transferred and accepted by another activity.

(3) TA/AS item or installation kit is expended.

(4) The readiness of a TA/AS item or installation kit is changed.

(5) A TA/AS item or installation kit previously reported as expended is reinstated into the inventory.

Real time reports are now available on the web site. An automated process will download and save end of month, quarter, and year reports.

i. Other Target Inventory Reporting. All government and contractor activities assigned custody of aerial and surface targets shall report their target flight consumables and component inventory status into the targets database at the <http://tercel.mugu.navy.mil/targets> web site whenever:

(1) A flight consumable or target component is received from another activity.

(2) A flight consumable or target component is transferred and accepted by another activity.

(3) A flight consumable or target component is expended.

(4) The readiness of a flight consumable or target component is changed.

(5) A flight consumable or target component previously reported as expended is reinstated into the inventory.

j. Visual Information Display System/Maintenance Action Form (OPNAV 4790/60). The VIDS/MAF is used to document, in addition to on-equipment maintenance actions, the removal and subsequent processing of a repairable component or item to an intermediate level maintenance activity. This form is used by supported maintenance and supply activities to request work from the supporting

intermediate level maintenance activity that is beyond the requesting activity's capability and does not involve repair of aeronautical material. Organizational level maintenance activities performing target system and equipment maintenance perform inventories of all serialized targets and report gains and losses as they occur in accordance with the maintenance data system using VIDS/MAFs. Appendix H, page H-10 depicts a sample of the VIDS/MAF and Volume II, Chapter 5.5 provides instructions and samples for completing the forms for specific maintenance tasks. A VIDS/MAF work request is used primarily for, but not limited to:

(1) To request check, test, and service of items removed from a target, aircraft, equipment, or armament weapons support equipment for scheduled maintenance when requested work is beyond the capability of the requesting activity.

(2) To induct items that are not part of a target, aircraft, or support equipment, for example, a pilot's personal equipment, oxygen masks, life preservers, and parachutes, that require check, test, and service.

(3) To induct components from supply for check, test, and service.

(4) To induct components from supply for build-up, such as engine, quick engine change kit, wheel and tire assembly, that are beyond the supply activity's capability.

(5) To induct components and items not having a work unit code or identifiable to a specific type of equipment for check, test, and service or for local manufacture or fabrication.

(6) To request a nondestructive inspection either on-site or at the intermediate maintenance activity, when a technical directive is not involved.

(7) To induct items for ready-for-issue certification prior to reinstallation in aircraft or target.

5.2.3 Visual Information Display System. The VIDS is a management tool that provides a visual display of up-to-date information on a continuing basis. In an organizational maintenance activity, the system correlates all aircraft status information, particularly not mission capable, supply and partially mission capable, supply and flyable discrepancies and assigns a relative importance to each item. Those activities using the naval aviation logistics command management information system, refer to the system user's manual for details concerning VIDS procedures.

5.2.3.1 Hardware. VIDS display boards consist of enlarged cardex type pockets for the visual display of weapon

and component status. Each pocket is overlapped by the one above so that an approximate 3/8-inch strip is visible at the bottom of the pockets. Boards are currently available in three sizes: 100, 50, and 25 pocket.

5.2.3.2 Material Requisition Register (OPNAV 4790/11). This form is used to transmit demands to the supporting supply activity when document facsimile transceiver equipment is not available. It is placed on the material control board to display an awaiting parts status. Data sequence is compatible with keypunch and military standard requisitioning and issue procedure formats. There are several types of commercial document facsimile transceiver equipment being used in maintenance or supply activities. Formats for the commercial forms should be compatible with keypunch and military standard requisitioning and issue procedure formats. With the exception of the material requisition register, no locally designed material requisition forms shall be used without approval of the aircraft controlling custodian or type commander. Appendix H, page H-21 depicts an example of the material requisition register and provides instructions for completing the record.

5.2.3.3 Software. Items used for operation of the VIDS, such as signal tabs, file containers, replacement pockets, three ring binders, etc., may be obtained through the Navy supply system or open purchase procurement.

5.2.3.4 Procedures. When notified by the workcenter that a part is required, the demand is transmitted to the supporting

activity using the priority and project code assigned by maintenance control. The workcenter and maintenance control should be advised of the requisition number assigned. A copy of the facsimile transceiver form, register, or other form is then placed on the VIDS board.

5.2.4 Explosives Handling Personnel Qualification and Certification (Qual/Cert) Program. Organizational level maintenance personnel involved with the loading or unloading, maintenance, handling, or storage of targets containing explosive devices or hypergolic fuels must be trained, qualified, and certified to perform these maintenance actions in accordance with the requirements of OPNAVINST 8020.14/MCO P8020.11 (NOTAL) or MCO 8023.3 (NOTAL) and applicable type commander instructions.

5.2.5 Maintenance Training Requirements. Maintenance training is a continuous and ongoing process, conducted to ensure that personnel who operate, maintain, and support weapons systems and associated equipments are qualified to perform their respective functions. Formal and on-the-job maintenance training, for targets processed at Organizational level maintenance activities, may be augmented through the use of Engineering Technical Specialists/Fleet Weapons Support Team provided by the Naval Air Warfare Center, Weapons Division, volume I, chapter 4.4 provides procedures for requesting field service training and technical assistance. Volume I, section 6 provides additional information on all aspects of Naval Airborne Weapons Maintenance Training.

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CHAPTER 5.3

Intermediate Level Maintenance

5.3.1 General. This chapter describes the intermediate level target maintenance actions performed by designated activities listed in figure 5-1-2. Intermediate level maintenance is performed by target maintenance technicians assigned to target maintenance activities.

5.3.2 Intermediate Level Maintenance Responsibilities

5.3.2.1 Intermediate level maintenance activities perform higher level maintenance actions on target systems and equipment. The primary objective of intermediate level maintenance is to maintain and issue operable target systems and equipment. It is intended that each maintenance task be performed at the level of maintenance which will ensure optimum economical use of material, manpower, and fiscal resources. However, there may be occasions when organizational and intermediate maintenance actions will overlap. When maintenance is beyond the capability of the custodian, it will be accomplished by the activity or department more capable of accomplishing the specific maintenance action. To determine the extent to which a repair task can be undertaken, the maintenance activity must consult the appropriate Maintenance Instruction Manual (MIM), operating or service instruction, or technical directive that pertain to each item of equipment. Intermediate level maintenance actions for target systems and equipment are associated with aircraft operations and include scheduled and unscheduled maintenance, time-phased and event-phased inspections, cleaning, minor corrosion control, and servicing. Scheduled and unscheduled maintenance actions are defined below:

a. **Scheduled Maintenance Requirements.** Scheduled maintenance is performed utilizing Maintenance Requirements Cards (MRC). MRCs are generated from the applicable MIM and are provided to facilitate a phased maintenance program for each target system or equipment. MRCs identify the maintenance tasks required to maintain an equipment in an effective operating condition and are arranged sequentially by work area and system. Scheduled maintenance requirements ensure timely discovery and correction of defects and consist of specific inspections contained in the applicable authorized MRCs. Reporting custodians may increase the depth and frequency of any scheduled inspection, require additional inspections whenever excessive time has elapsed between inspections, or when environmental or operational conditions

are considered to have impaired the material reliability or integrity of the equipment. Inspections performed to a greater depth or at an increased frequency are logged, if required, as the type which would normally be performed and do not alter the schedule of the programmed inspections.

b. **Unscheduled Maintenance Requirements.** Unscheduled maintenance is the maintenance required to correct discrepancies and deficiencies found during operations or scheduled maintenance. Unscheduled maintenance consists of fault isolation (troubleshooting), repair, replacement, test, and calibration.

5.3.2.2 Figure 5-3-1 assigns the intermediate level maintenance actions that are performed on the targets listed in volume II chapter 5.1. These assigned maintenance actions are described generally in paragraphs 5.3.2.2.1 through 5.3.2.2.9. All maintenance actions are performed in accordance with the applicable authorized Naval Air Systems Command maintenance plans, technical manuals, loading manuals, checklists, and MRCs which have been developed for each target system and launch platform.

5.3.2.2.1 Conditional Inspection. A conditional inspection is an unscheduled inspection required as a result of a specific overlimit condition. Conditional inspections are performed by intermediate level maintenance personnel and include tests and inspections to determine the condition of the target components after handling incidents, droppage, aborted launches, or hot starts. All conditional inspections are conducted in accordance with the applicable authorized MRCs or MIM.

5.3.2.2.2 Rehabilitation Inspections. Target component rehabilitation inspections are postlaunch inspections that are considered to be at calendar depth. This inspection is conducted by intermediate level maintenance personnel to determine any degradation or damage that may have occurred during a mission and to perform necessary rehabilitation, including testing and servicing, to return the target to an operational status. Rehabilitation includes disassembly, decontamination, corrosion control, visual inspection, repair of operational and retrieval damage, correction of discrepancies, bench testing of components, reassembly of the target and complete system testing. All rehabilitation inspections are conducted in accordance with the applicable authorized MRCs.

Target Type	5.3.2.2.1 Conditional Inspection	5.3.2.2.2 Rehabilita- tion	5.3.2.2.3 Corrosion Control/ Preservation	5.3.2.2.4 Bench Check/ Test	5.3.2.2.5 Component Installation/ Removal	5.3.2.2.6 Component Repair	5.3.2.2.7 Component Overhaul	5.3.2.2.8 Discrepancy Reports	5.3.2.2.9 Record Keeping/ Report- ing
BQM-34	X	X	X	X	X	X	X	X	X
BQM-74	X	X	X	X	X		X	X	X
MQM-8G/ER/ EER	X		X	X	X			X	X
QF-4N	X	X	X	X	X	X		X	X
QLT-1C	X	X	X	X	X		X	X	X
RMK-19/ A47U-3	X		X		X	X		X	X
RMK-31/ A47U-4	X		X		X	X		X	X
TDU-32A/B	X	X	X		X			X	X
TDU-34A/A	X	X	X		X			X	X

Figure 5-3-1. Intermediate Level Maintenance Responsibilities for Target Systems

5.3.2.2.3 Corrosion Control and Preservation. Intermediate level maintenance personnel perform routine corrosion control inspections on targets and Aircraft Armament Equipment (AAE) in the activity's custody. Minor corrosion discovered during inspections can be removed using preventive maintenance procedures. The procedures normally consist of cleaning, light sanding of surface corrosion, treating, priming, and touchup painting. Corrosion control is mandatory and shall be performed on a scheduled basis as required to maintain the protective envelope on the target and not merely for cosmetic purposes. Corrosion procedures for MQM-8g/er/er have to be performed in accordance with Allied Signal Procedure MIS-SE-3000 (Handling and Processing of VANDALS Thorium/Magnesium Missile Parts) due to personnel hazards from radioactive alloys used in the VANDAL targets. All corrosion control procedures will be performed in accordance with NAVAIR 01-1A-75 (Airborne Weapons and Associated Equipment, Consumable Material Applications and Hazardous Material Authorized Use List) (NOTAL) for all targets except QF-4N and for target peculiar support and avionics equipment; NAVAIR 01-1A-509 (Aircraft Cleaning and Corrosion Control for Organizational and Intermediate Level Maintenance), NAVAIR 15-01-500 (Preservation of Naval Aircraft), and NAVAIR 17-1-125 (Support Equipment Cleaning, Corrosion Control Manual). Cleaning of avionics test and measurement equipment shall be in accordance with NAVAIR 16-1-540 (Avionics Cleaning Corrosion Prevention/Control).

5.3.2.2.4 Bench Check and Test. Bench test is the subjection of target engines, accessories, equipment, and equipment to prescribed conditions and specifications with the use of shop test equipment to ensure proper functioning in accordance with predetermined requirements. A bench check consists of a physical inspection or functional test of an item removed due to an alleged malfunction. Through the bench check, intermediate level maintenance personnel determine if the part or item is serviceable or repairable. The bench check also includes a determination of the maintenance, repair, or possible overhaul required to return the target to serviceable status. All bench checks and tests are performed in accordance with the applicable authorized MIM.

5.3.2.2.5 Component Installation and Removal. Intermediate level maintenance personnel are responsible for performing corrective maintenance to return repairable items to service. This maintenance is normally accomplished on targets, aerial tow reeling machines and launchers, and target control sets. This consists of replacing defective parts, assemblies, circuit cards, electrical or electronic parts and the repair and testing of material and components in accordance with the applicable authorized MIM.

5.3.2.2.6 Component Repair. Intermediate level maintenance personnel perform intermediate level maintenance and repair of target system components as specified in the applicable authorized target MIM by ensuring the necessary maintenance actions such as preparation, fault correction, disassembly, inspection, replacement of parts, adjustment, reassembly, calibration and tests required to restore items to a serviceable status are complete.

5.3.2.2.7 Component Overhaul. Component overhaul is performed as a means of inspecting all the operating components of the end article. Intermediate level maintenance personnel first disassemble the subject component, then conduct repair, replacement, or servicing as necessary, followed by reassembly and bench check and test. All overhaul maintenance actions are performed in accordance with the applicable authorized technical manual.

5.3.2.2.8 Discrepancy Reports. Discrepancy reports are initiated at the intermediate level when a discrepancy is discovered during the performance of any of the assigned intermediate level maintenance actions. Discrepancy reporting procedures are contained in OPNAVINST 5102.1C and volume I, chapter 4.6. The Product Quality Deficiency Report (PQDR) program provides target activities with a method for reporting deficiencies in new or newly reworked targets or target components which may be attributable to non-conformance of contractual or specification requirements or substandard workmanship. Targets and/or target components under warranty are considered to be new material for PQDR purposes. In the event that a deficiency is discovered during the processing of a newly reworked target or component that is under warranty, and that deficiency is not a result of maintenance handling or processing, the item shall be considered to be in breach of warranty provisions of the contract and is therefore subject to the provisions of the warranty. Warranty claim actions shall be handled as follows:

a. A PQDR form (SF 368) will be used to process warranty actions. The SF 368 will be clearly marked "Warranty Claim Action" and will include the following (in addition to information required in volume I, chapter 4.6):

- (1) Date of failure (Block 4).
- (2) Item serial number (Block 9).
- (3) Production contract number (Block 10).
- (4) Warranty expiration date (Block 22).
- (5) Detailed circumstances leading to discovery of failure (Block 22).

(6) When in doubt as to whether the item is still under warranty (new or newly reworked), submit the completed PQDR checking "Unknown" in block 19a of the SF 368, and forward to the screening point. The screening point will check for validity and completeness, and continue to process the document as a valid PQDR, and EI, etc.

b. In addition to normal distribution, a copy of the completed PQDR and logbook/section will be placed in the container with the failed item and the item will be returned to the vendor for repair under the warranty provisions of the contract. A copy of the PQDR will be sent to the NAVAIR-SYSCOM (AIR-3.1.3) Assistant Program Manager, Logistics responsible for the item. Discrepancy reports will be prepared and submitted by target activities in accordance with Naval Aviation Maintenance Discrepancy Reporting Program (NAMDRP) procedures. Target systems and equipment discrepancy reports peculiar to missile targets will be documented in accordance with this instruction. Aircraft system discrepancy reports peculiar to aircraft target drones (QF-4) shall be documented in accordance with discrepancy reporting procedures as prescribed in OPNAVINST 4790.2H (NOTAL).

5.3.2.2.9 Record Keeping and Reporting. Intermediate level maintenance activities are responsible for maintaining target logbooks, engine logbooks, target discrepancy books, target performance reports, the Visual Information Display System/Maintenance Action Form (VIDS/MAF), and the work request customer service form as described below for target systems in their custody.

a. The Engine Logbook. The engine logbook must retain manufacturer's engine test parameters in the manila envelope located in the back of the logbook and will contain the following records:

(1) Aeronautical Equipment Service Record (AESR) (OPNAV 4790/29). Appendix H depicts an example of the AESR.

(2) Equipment Operating Record (OPNAV 4790/31A). Appendix H depicts an example of the equipment operating record.

(3) Inspection Record (OPNAV 4790/22A). Appendix H depicts an example of the inspection record.

(4) Record of Rework (OPNAV 4790/23A). Appendix H depicts an example of the record of rework.

(5) Technical Directives (OPNAV 4790/24A). Appendix H depicts an example of the technical directive record.

(6) Miscellaneous/History (OPNAV 4790/25A). Entries shall be made to reflect historical data for which there is no special provision. Appendix H depicts an example of the miscellaneous history record.

(7) Preservation/Depreservation Record (OPNAV 4790/136A). Appendix H depicts an example of the preservation or depreservation record.

b. Target Performance Report (formerly OPNAV 8600/15). The individual target performance report documents target performance. These reports shall now be completed electronically in an automated web accessible database for Navy wide use. TARGETS DES is a secure web site. A username and pass word can be obtained by contacting the AWIS Access Desk at (805) 484-6565 or DSN 893-6565. To access TARGETS DES one of the following browsers must be loaded and properly configured on a personal computer. In addition, 128 encryption must be installed for the browser used. (For best performance, Internet Explorer, with the display resolution set to 800x600 (or greater) is recommended.) Internet Explorer (I.E.) 4.0 or above with 128 bit encryption. Netscape 4.0 or above with 128 bit encryption. Executable install versions and upgrades of both of these browsers can be downloaded from the Targets web site home page: <http://tercel.mugu.navy.mil/targets>. The users guide is available on this web page or on compact disc (CD) by contacting the AWIS help desk at commercial (805) 484-6512. All target operating activities are required to report on target performance whenever:

(1). A powered target is operated.

(2). A TDU-34 tow target is streamed.

(3). A previously submitted target performance report requires correction or deletion. Reports are to be completed immediately after the operation and submitted into the database within 24 hours if the target is expended and 48 hours if the target was not expended. All target performance reports are now part of the AWIS database and can be accessed electronically at the above web site.

c. Current expenditure/allocation information will be available as part of the target site on the AWIS database system at: <http://tercel.mugu.navy.mil/targets>. The expenditure database will be updated automatically based on the input of the target performance report by the operating activity. Target operating activities are still required to transmit a message report within 24 hours of a target loss, listing target, serial number, calendar date of expenditure, activity charged (SYSCOM/Subclaimant/FMS), weapon system utilized/FMS case number. These messages will be addressed to NAVAIRWARCENWPNDIV Code 323210E. All aerial towed targets (TDU-32, TDU-34) data may be inputted

weekly. Real time reports are now available on the web site. An automated process will download and save end of month, quarter, and year reports.

d. Inventory and Readiness Reporting. Target inventory/readiness report will now include only three categories:

- (1) Mission Capable.
- (2) Non-Mission Capable Supply.
- (3) Non-Mission Capable Maintenance.

These are defined as:

(a) Mission Capable Includes:

- (1) Targets ready for flight.
- (2) The basic target configuration is ready to be rendered capable for flight and recovery (e.g. includes airframe, ordnance, consumables, etc).
- (3) A target that is new in crate that has all necessary equipment in inventory, on-site, to render capable for flight and recovery.

(b) Non-Mission Capable Supply The target is not operationally ready because of supply (e.g. item is not on-site).

(c) Non-Mission Capable Maintenance (NMCM) The target system is not operationally ready because a maintenance action required.

(1) Start NMCM when a condition is discovered.

(2) Stop NMCM when maintenance is complete, or interrupted by supply shortage.

(3) Start NMCM when the component is provided from supply and maintenance resumes.

(4) Includes grounded targets with outstanding airframe EI's or PQDR's.

(5) All Aerial Target and Target Auxiliary/Augmentation inventory and readiness changes shall be reported as follows:

(a) All non-deployed target operating activities with internet access shall report changes in the inventory at the close of business each day and changes in readiness condition at the end of each week.

(b) All deployed activities with internet access shall report changes in the inventory and readiness condition at the end of each week.

(c) Any target operating activity without internet access shall forward their changes in the inventory and readiness condition at the end of each week via facsimile to the database manager at DSN 351-3890 or commercial (805) 989-3890 Attention Code 323210E.

e. Target Inventory Reports. All government and contractors activities assigned custody of serialized aerial and surface targets, including tow reels and launchers, and non-serialized aerial tow targets and aerial banner tow targets shall provide their inventory and condition status into the targets database at the <http://tercel.mugu.navy.mil/targets> web site when ever:

- (1) A target is received from another activity.
- (2) A target is transferred and accepted by another activity.
- (3) A target is expended.
- (4) The readiness of a target is changed.
- (5) A target previously reported as expended is reinstated into the inventory real time reports are now available on the web site. An automated process will download and save end of the month, quarter, and year reports.

f. Target auxiliary/Augmentation System (TA/AS) and Consumable/Kit Inventory Reports. All government and contractor activities in possession of and/or assigned custody of TA/AS items and installation kits for aerial and surface targets shall provide their inventory and condition status into targets database at the: <http://tercel.mugu.navy.mil/targets> web site whenever:

- (1) A TA/AS item or installation kit is received from another activity.
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- (3) TA/AS item or installation kit is expended.
- (4) The readiness of a TA/AS item or installation kit is changed.
- (5) A TA/AS item or installation kit previously reported as expended is reinstated into the inventory.

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mated process will download and save end of month, quarter, and year reports.

g. Other Target Inventory Reporting. All government and contractor activities assigned custody of aerial and surface targets shall report their target flight consumables and component inventory status into the targets database at the <http://tercel.mugu.navy.mil/targets> web site whenever:

(1) A flight consumable or target component is received from another activity.

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(3) A flight consumable or target component is expended.

(4) The readiness of a flight consumable or target component is changed.

(5) A flight consumable or target component previously reported as expended is reinstated into the inventory.

h. Visual Information Display System/Maintenance Action Form (OPNAV 4790/60). The VIDS/MAF is used to document, in addition to on equipment maintenance actions, the removal and subsequent processing of a repairable component or item to an intermediate level maintenance activity. This form is used by supported maintenance and supply activities to request work from the supporting intermediate level maintenance activity that is beyond the requesting activity's capability and does not involve repair of aeronautical material. Intermediate level maintenance activities performing target systems and equipment maintenance perform inventories of all serialized targets and report gains and losses as they occur in accordance with the Navy planned Maintenance Data System using VIDS/MAF. Appendix H, page H-10 depicts sample VIDS/MAF, and Chapter 5.5 provides instructions and samples for completing the forms for specific maintenance tasks. OPNAVINST 4790.2H provides instructions for completing the form. A VIDS/MAF work request is used primarily for, but not limited to, the following:

(1) To request check, test, and service of items removed from a target, aircraft, equipment, or armament weapons support equipment for scheduled maintenance when requested work is beyond the capability of the requesting activity.

(2) To induct items that are not part of a target, aircraft, or support equipment, for example, a pilot's person-

al equipment, oxygen masks, life preservers, and parachutes, that require check, test, and service.

(3) To induct components from supply for check, test, and service.

(4) To induct components from supply for build-up, such as engine, quick engine change kit, wheel and tire assembly, that are beyond the supply activity's capability.

(5) To induct components or items not having a work unit code or identifiable to a specific type of equipment for check, test, and service or for local manufacture or fabrication.

(6) To request a nondestructive inspection either on-site or at the intermediate maintenance activity, when a technical directive is not involved.

(7) To induct items for ready-for-issue certification prior to reinstallation in aircraft or target.

i. Work Request Customer Service (OPNAV 4790/36A). This form is used to request work or assistance from a depot overhaul point that is beyond the requesting activity's maintenance capability. Intermediate level maintenance activities use this form to request assistance from depot level activities to complete components delayed in process due to lack of facilities for check and test, or for processing not normally required, such as heat treatment, plating, magnaflux, and machine shop. Appendix H, page 20 depicts an example of a work request customer service form and provides instructions for completing the form.

j. Support Equipment Depot Rework Schedule Request (OPNAV 4790/80). The form is used to request scheduling of end items of support equipment that are beyond the requesting intermediate level activity's maintenance capability.

5.3.3 Visual Information Display System. VIDS is a management tool that provides a visual display of up-to-date information on a continuing basis. In an intermediate level maintenance activity, the system correlates all aircraft status information, particularly not mission capable, supply and partially mission capable, supply and flyable discrepancies and assigns a relative importance to each item. Those activities using the naval aviation logistics command management information system, refer to the system user's manual for details concerning VIDS procedures.

5.3.3.1 Hardware. VIDS display boards consist of enlarged cardex type pockets for the visual display of weapon or component status. Each pocket is overlapped by the one

above so that an approximate 3/8-inch strip is visible at the bottom of the pockets. Boards are currently available in three sizes: 100, 50, and 25 pocket.

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5.3.3.3 Software. Items used for operation of the visual information display system, such as signal tabs, file containers, replacement pockets, three-ring binders, etc., may be obtained through the Navy supply system or open purchase procurement.

5.3.3.4 Procedures. When notified by the workcenter that a part is required, the demand is transmitted to the supporting

activity using the priority and project code assigned by maintenance control. The workcenter and maintenance control should be advised of the requisition number assigned. A copy of the facsimile transceiver form, register, or other form is then placed on the VIDS board.

5.3.4 Explosives Handling Personnel Qualification and Certification (Qual/Cert) Program. Intermediate level maintenance personnel involved with the installation, removal, maintenance, handling, or storage of explosive devices or hypergolic fuels or targets containing explosive devices or hypergolic fuels must be trained, qualified, and certified to perform these maintenance actions in accordance with the requirements of OPNAVINST 8020.14/MCO P8020.11 (NOTAL) or MCO 8023.3 (NOTAL) and applicable type commander instructions.

5.3.5 Maintenance Training Requirements. Maintenance training is a continuous and ongoing process, conducted to ensure that personnel who operate, maintain, and support weapons systems and associated equipments are qualified to perform their respective functions. Formal and on-the-job maintenance training, for targets processed at Intermediate level maintenance activities, may be augmented through the use of Engineering Technical Specialists/Fleet Weapons Support Team provided by the Naval Air Warfare Center, Weapons Division, volume I, chapter 4.4 provides procedures for requesting field service training and technical assistance. Volume I, section 6 provides additional information on all aspects of Naval Airborne Weapons Maintenance Training.

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CHAPTER 5.4

Depot Level Maintenance

5.4.1 General. This chapter discusses the maintenance actions assigned to depot level maintenance activities. Depot level activities support the organizational and intermediate levels by providing technical assistance in carrying out those functions which are beyond the responsibility or capability of organizational level and intermediate level activities through the use of more extensive facilities, skills, and materials. Depot level functions are carried out in industrial establishments or in the field by personnel from such establishments. Depot level industrial establishments may be government-owned and government-operated, government-owned and contractor-operated, or contractor-owned and contractor-operated.

5.4.2 Assignment of Depot Level Responsibilities. The activities assigned to perform depot level maintenance on target systems and equipment are listed in figure 5-4-1. In some instances complete targets are returned to depot level maintenance and in others only the failed section is returned.

5.4.3 Depot Level Maintenance Actions. Maintenance actions assigned to the depot are:

- a. All maintenance and modification actions necessary for the rework and repair of the target sections and components under their cognizance.
- b. When authorized, depot level activities manufacture items and component parts otherwise not available when that action is deemed necessary and is appropriately authorized.
- c. Support services functions, including professional engineering, technology, and calibration services, and field teams to support organizational level and/or intermediate level maintenance when required and directed.

5.4.4 Depot Level Maintenance Responsibilities

5.4.4.1 Depot level maintenance responsibilities include those actions required to maintain or restore the inherent design service levels of performance, reliability, and material condition; they span complete rebuild through reclamation, refurbishment, overhaul, repair, replacement,

adjustment, servicing, and replacement of consumables. They also include inspection, calibration, and testing.

5.4.4.2 Depot level maintenance is also responsible for all modification actions required to change or improve design levels of performance, reliability, and material. The term modification, as used in this instruction, includes alteration, conversion, engineering change, modernization, etc.

5.4.4.3 Normally, depot level maintenance of each target component will be limited to repairs where the cost of repair does not exceed new procurement costs. This criteria will not be applied to items which are identified as critical, in short supply status, or when recovery is in the best interest of the government.

5.4.5 Depot Maintenance Processing. All depot maintenance actions are performed in accordance with the applicable instructions and specifications.

5.4.6 Technical Directives. Depot level maintenance personnel are not only responsible for assuring that technical directives are complied with, they also assist in the development and verification of technical directives that ultimately affect them. This assistance includes engineering change proposal review, development of the resulting technical directive, and verification prior to implementation of the technical directive.

5.4.7 Target Logbooks

5.4.7.1 All activities that have reporting custody of target systems shall maintain target logbooks and associated records for their assigned target systems in a proper and up-to-date status. Target logbooks provide a history of maintenance, operation, and configuration control of the target. The logbook is a hard cover, looseleaf ring binder containing separators and page insert forms. The original accepting activity, upon acceptance of the target, will initiate the target logbook. The logbook is kept in the maintenance or production control office. Any classified logbook information shall be safeguarded in accordance with applicable security regulations. When the target is transferred, the logbook is transferred with the target. The logbook will be brought up-to-date before the transfer. The logbook will be kept

Target Type	Northrop Grumman Ryan Aeronautical, San Diego, CA	Northrop Grumman El Segundo CA	Williams Internation- al, Walled Lake, MI	Allied Signal, Mishawaka, IN	MCAS Cherry Pt. NC	NAS North Island, CA	NAWCWD Point Mugu, CA	Raytheon Company Andover, KS	None
BQM-34	X								
BQM-74		X							
Y/J400 En- gines			X						
AQM-37								X	
MQM-8G/ER/ EER				X					
QF-4:					X				
Conversion					X				
Drone Equip.					X				
QLT-1C									
RMK-19/A47U-3						X			
RMK-31/A47U-4						X			
TDU-32A/B									X
TDU-34A/A									X

Figure 5-4-1. Assignment of Depot Level Target System Maintenance Responsibilities

neat and clean and entries will be printed in black ink (no felt-tipped pens will be used) or typewritten. The following pertain to aerial subscale and land targets only. All full scale target logbooks will be maintained using the criteria for aircraft specified in OPNAVINST 4790.2H (Naval Aviation Maintenance Program) (NOTAL).

5.4.7.2 The target logbook will contain at least the following records:

- a. Equipment Operating Record (OPNAV 4790/31A). Appendix H depicts an example of the equipment operating record.
- b. Inspection Record (OPNAV 4790/22A). Appendix H depicts an example of the inspection record.
- c. Technical Directives (OPNAV 4790/24A). Appendix H depicts an example of the technical directive record.
- d. Miscellaneous/History (OPNAV 4790/25A). Entries shall be made to reflect historical data for which there is no special provision. Appendix H depicts an example of the miscellaneous history record.
- e. Preservation/Depreservation Record (OPNAV 4790/136A). Appendix H depicts an example of the preservation or depreservation record.

5.4.7.3 The Engine Logbook. The engine logbook must retain manufacturer's engine test parameters in the manila envelope located in the back of the logbook and will also contain the following records:

- a. Cover Page (OPNAV 4790/29). Appendix H depicts an example of the cover page.
- b. Equipment Operating Record (OPNAV 4790/31A). Appendix H depicts an example of the equipment operating record.

- c. Inspection Record (OPNAV 4790/22A). Appendix H depicts an example of the inspection record.

- d. Record of Rework (OPNAV 4790/23A). Appendix H depicts an example of the record of rework.

- e. Technical Directives (OPNAV 4790/24A). Appendix H depicts an example of the technical record.

- f. Miscellaneous/History (OPNAV 4790/25A). Entries shall be made to reflect historical data for which there is no special provision. Appendix H depicts an example of the miscellaneous history record.

- g. Preservation/Depreservation Record (OPNAV 4790/136A). Appendix H depicts an example of the preservation and depreservation record.

5.4.8 Explosives Handling Personnel Qualification and Certification (Qual/Cert) Program. Depot level maintenance personnel involved with the maintenance of explosive devices or hypergolic fuels and targets containing explosive devices or hypergolic fuels must be trained, qualified, and certified to perform these maintenance actions in accordance with the requirements of OPNAVINST 8020.14/MCO P8020.11 (NOTAL), MCO 8023.3 (NOTAL), or as otherwise specified.

5.4.9 Maintenance Training Requirements. Maintenance training is a continuous and ongoing process, conducted to ensure that personnel who operate, maintain, and support weapons systems and associated equipments are qualified to perform their respective functions. Formal and on-the-job maintenance training, for targets processed at industrial level maintenance activities, may be augmented through the use of Engineering Technical Specialists/Fleet Weapons Support Team provided by the Naval Air Warfare Center, Weapons Division, volume I, chapter 4.4 provides procedures for requesting field service training and technical assistance. Volume I, section 6 provides additional information on all aspects of Naval Airborne Weapons Maintenance Training.

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CHAPTER 5.5

Target and Target Equipment Maintenance Documentation

5.5.1 General. This chapter provides information and sample documents designed to aid maintenance and production controllers in properly documenting target systems and equipment maintenance. Each sample illustrates the proper entries required for the type of maintenance being performed, and was prepared using the documentation procedures set forth in the Naval Aviation Maintenance Program (NAMP), OPNAVINST 4790.2H (NOTAL).

5.5.2 Target Maintenance Documentation

5.5.2.1 Source documents are the Visual Information Display System/Maintenance Action Forms (VIDS/MAF) OPNAVINST 4790/60. Other documents required to properly complete the source documents include appropriate work unit code (WUC) manuals, maintenance requirements cards (MRC), local maintenance instructions, and appropriate technical manuals. The VIDS/MAF will be used to document the following types of target maintenance actions:

- a. The look phase of post-launch rehabilitation inspections (target calendar depth), acceptance/initial build-up, special, conditional, and corrosion inspections as required.
- b. Fix in place actions discovered during inspection.
- c. On equipment work not involving removal of defective or suspected defective repairable components.
- d. Removal of components for check/test/service actions.
- e. Removal and replacement actions for cannibalization.
- f. Maintenance actions and man hours of an assisting work center in support of a primary work center.
- g. Repairable item processing through an intermediate maintenance activity (IMA).
- h. Troubleshooting man hours.
- i. Removal or installation of configuration kits for target re-configuration.

- j. Incorporation of technical directives (TD) and associated maintenance actions.

- k. Removal or replacement of repairable components.

- l. Recording the ordering and issuing of repairable components, subassemblies, and parts.

- m. Accumulated man hours on deferred work closed out due to an inventory loss (for any reason) of a target.

- n. Recording an inventory status change.

- o. Preservation and depreservation of targets.

5.5.2.2 Document Flow. The following are the primary document flow cycles for the VIDS/MAF.

- a. **Organizational Level.** Once Maintenance Control completes the VIDS/MAF, copy 3 of the VIDS/MAF is placed in the applicable VIDS board column, copy 2 is forwarded to quality assurance (QA), and copies 1 and 5 are forwarded to the appropriate work center. Copy 4 is placed in the target discrepancy book (TDB), where it shall remain as long as the discrepancy is outstanding. When corrective action has been completed, Maintenance Control will verify copy 1 of the VIDS/MAF and transcribe the applicable data to copies 3 and 4. Copy 3 is then filed in the TDB. Copy 4 is removed from the TDB and forwarded to QA for trend analysis and other local use. See figure 5-5-1 for an overview of the document flow cycle at the organizational (O) level.

- b. **Intermediate Level.** The VIDS/MAF flow for off equipment work at the intermediate (I) level is shown in figure 5-5-2. Document flow for maintenance on support equipment is shown in figures 5-5-3 and 5-5-4.

5.5.3 Target Drones

5.5.3.1 Aircraft system maintenance actions peculiar to aircraft target drones (QF-4) shall be documented in accordance with aircraft documentation procedures as prescribed in OPNAVINST 4790.2H (NOTAL). Target systems and

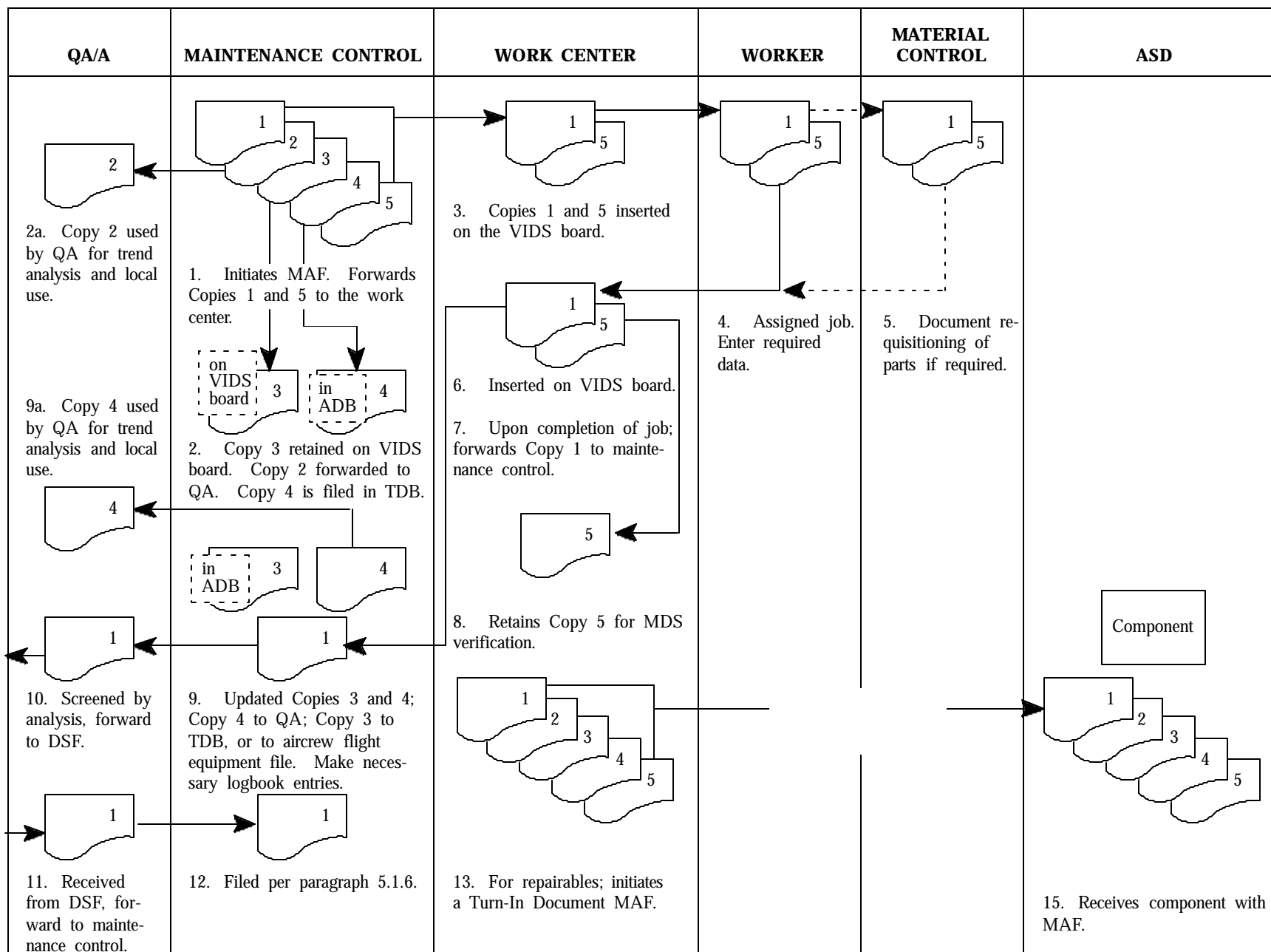


Figure 5-5-1. Organizational VIDS/MAF Document Flow.

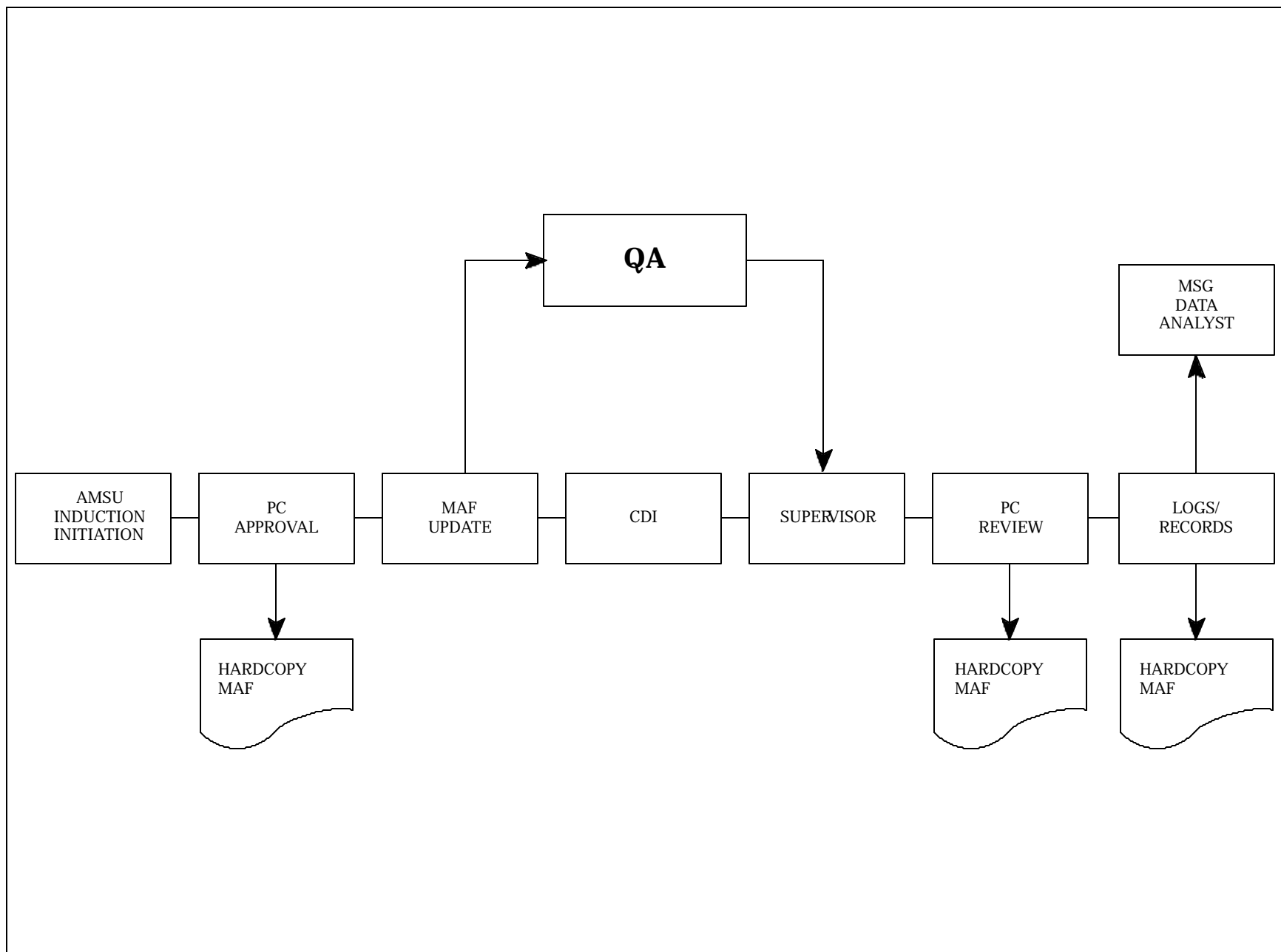


Figure 5-5-2. Intermediate Level Off-Equipment VIDS/MAF Document Flow.

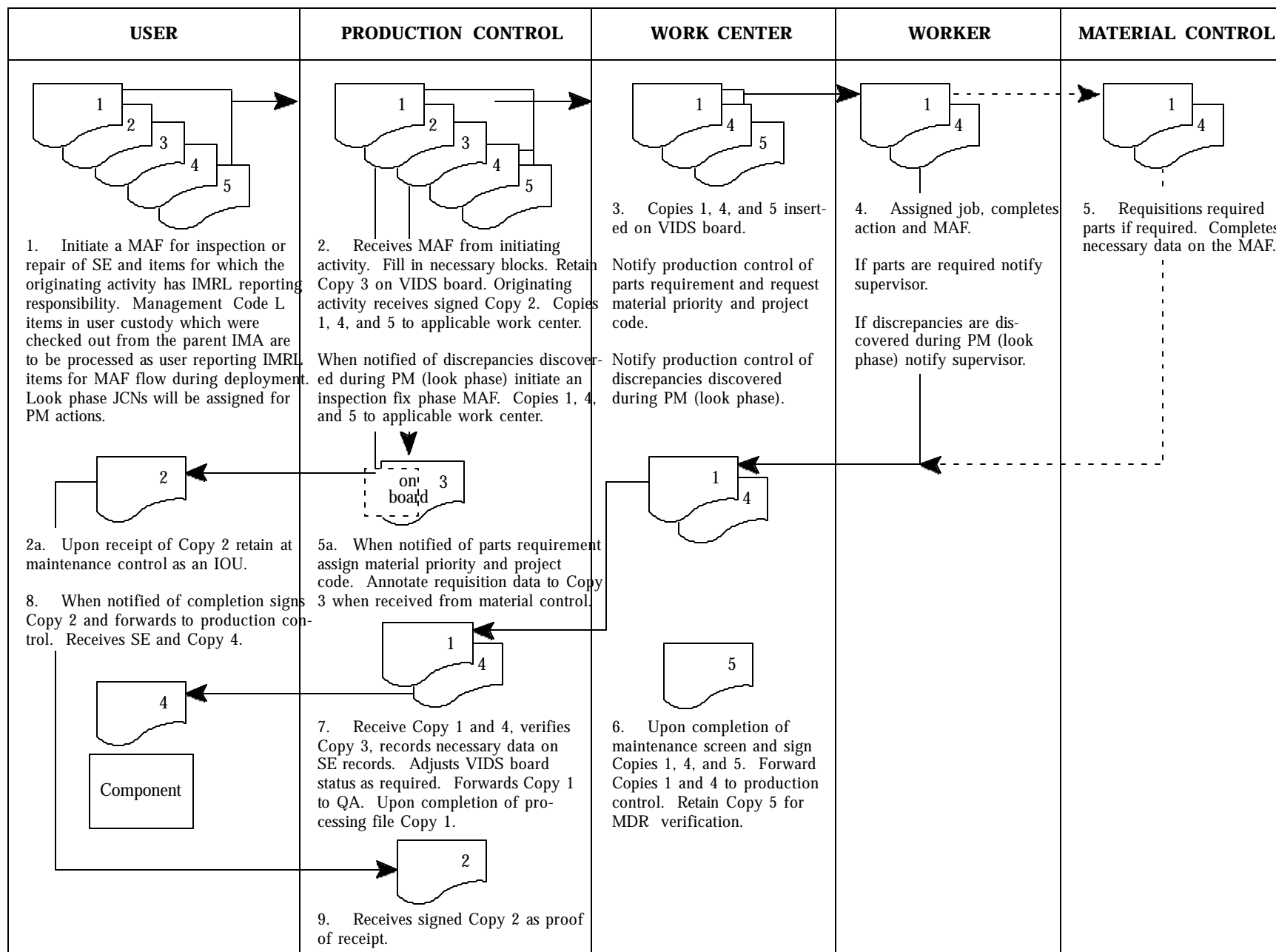


Figure 5-5-3. VIDS/MAF Flow for Organizational Maintenance Activity Support Equipment

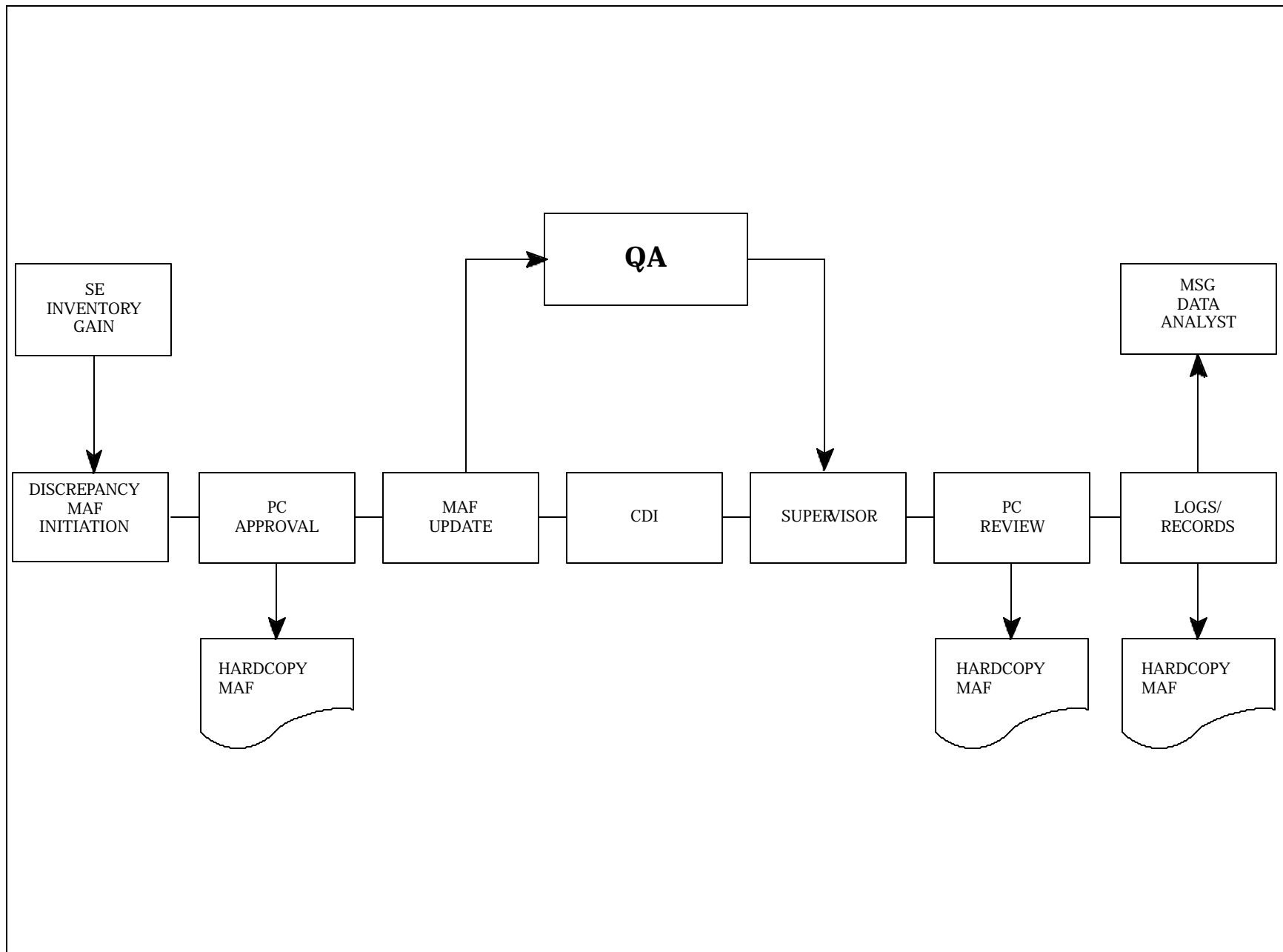


Figure 5-5-4. VIDS/MAF Flow for Intermediate Maintenance Activity Support Equipment.

equipment maintenance actions peculiar to missile targets shall be documented in accordance with this instruction.

5.5.4 Documentation Procedures

5.5.4.1 A brief explanation of the terms, data elements, and codes used in the Maintenance Data Reporting (MDR) system is given in this section. When entering the number 0, do not use slashes through the 0 to differentiate from the letter O.

a. **Manufacturer's Code (Block E08).** A manufacturer's code is a five-character numeric or alphanumeric code that identifies the manufacturer of a component, part, end item, etc. These codes can be found in Handbooks H4-1 and H4-2, published by the Defense Logistics Services Center, Battle Creek, MI.

b. **Julian Date.** The Julian date identifies the year and a numerical day of the year, and consists of four digits. The first digit indicates the year, and the remaining characters specify the day of the year. For example, in the Julian date 6122, the first character (6) indicates the year (1996), and the last three characters specify the 122nd day of 1996, or 1 May 1996.

c. **Job Control Number.** The job control number (JCN) is composed of four parts:

(1) **Organization code (Block A08).** This is a three-character alphanumeric code that identifies an organization. The general format and structure of organization codes are described in appendix K of OPNAVINST 4790.2H (NOTAL). A complete listing of organization codes may be found in the organization code master listing (NSLC 4790.A7065-01).

(2) **Day (Block A11).** This is the three-character part of the Julian date specifying the day of the year. This is the date the JCN was assigned to a maintenance action and does not necessarily reflect the date on which work was actually started.

(3) **JCN Serial Number (Block A14).** The serial number is either a three character number that runs sequentially from 001 to 999, or a three character alphanumeric with an alphabetic first letter and the last two characters generally running sequentially from 00 to 99. If, however, more than 99 are needed, use alpha characters in the second and third positions. Serial numbers are normally assigned in sequence as new jobs are initiated, e.g., 001, 002, 003, etc. When 999 has been assigned, the next number in sequence will again be 001. Serial numbers with alphabetic first characters are used only when documenting inspections other than prelaunch, turn-

around, daily, special, conditional, corrosion, and acceptance/transfer inspections.

(4) **Suffix (Block A17).** The JCN suffix is a structured alphabetic/numeric code added to the basic JCN to identify a subassembly or sub-subassembly repair action performed independently of the major component repair. The suffix is used only for I-level maintenance functions regardless of where maintenance is being performed.

d. **Type Equipment Code (Block A48).** The type equipment code (TEC) is a four character code used to identify the complete end item or category of equipment being worked on, e.g., target, engine, or support equipment. TECs for target systems can be found in appendix H of this instruction.

e. **Bureau/Serial Number (Block A52).** A bureau/serial number is a number that identifies a specific end item/component. The number is usually assigned by the manufacturer, and is used to differentiate between a particular end item/component and others of the same type, model, series, design, etc. The serial number is always six characters and never zero. If there are more than six characters, enter only the last six. If there are less than six, prefix the numbers with zeros. If there is no serial number (due to missing nameplate, etc), create a serial number by using the organizational code of the reporting custodian plus a unique, locally assigned three character serial, e.g., WAR001, WAM231. This assigned serial number is to be affixed to the equipment and will remain with it until the equipment is stricken from naval inventory.

f. **Work Center Code (Block A19).** Work center codes are three character codes that identify work centers. Work center codes can be found in appendix D of OPNAVINST 4790.2H.

g. **Maintenance Level (Block A34).** The MDR system is designed so that the level of the maintenance actually being performed is indicated in this block. This information is not to be confused with the maintenance level assigned to the activity.

h. **Work Unit Code (Block A22).** The work unit code (WUC) is a one, three, five, or seven character numeric or alphanumeric code. A WUC identifies a system, subsystem, set, major component, repairable subassembly, or part of an end item on which work is being performed. These codes are assigned and controlled by the Naval Air Technical Data and Engineering Service Command (NAVAIRTECHDATAENGSRVCOM) under the direction of Naval Air Systems Command (COMNAVAIRSYSCOM) and published in WUC manuals for end items.

i. When Discovered Code (Block A58). The when discovered code is a single alphabetic character that identifies when the need for maintenance was discovered. These codes are applicable to the VIDS/MAF only. When discovered codes are in all applicable WUC manuals and in appendix R of OPNAVINST 4790.2H.

j. Type Maintenance Code (Block A59). The type maintenance code is a one character alphabetic or numeric code used to describe the type of work being accomplished, e.g., scheduled, unscheduled, supply support, etc. Definitions and explanations of these codes can be found in the WUC manuals and in appendix H of OPNAVINST 4790.2H.

k. Action Taken Code (Block A35). The action taken code is a one character alphabetic or numeric code that describes the action that has been taken. This code describes what action has been performed on the item identified by the WUC. Action taken codes can be found in the WUC manuals and in appendix E of OPNAVINST 4790.2H.

l. Malfunction Code (Block A36). The malfunction code is a three character alphanumeric code used to describe the malfunction which caused the maintenance action on the item described by the WUC. Current malfunction codes can be found in appendix D of this instruction and appendix I of OPNAVINST 4790.2H.

m. Items Processed (Block A39). The number of items processed is the number of times that an action, indicated by the action taken code, is completed on the item identified by the WUC recorded on the VIDS/MAF, or the number of items completed by a support action. The items processed block is limited to two characters. If the count exceeds 99 items processed, an additional form must be prepared and submitted.

n. Man Hours (Block A41). Entries in the man-hours block represent all man hours expended by assigned personnel to complete the work described on the source document. Hours and tenths worked, multiplied by the number of men working, equals total man hours. The entry in the man hours block does not include labor hours for any work center other than the one submitting the document. For example, if two work centers jointly correct a discrepancy (same JCN) on the same target or equipment, workers from each work center submit a source document with that particular work center's labor hours in the man hours block.

o. Elapsed Maintenance Time (Block A45). The elapsed maintenance time (EMT) is defined as the actual

clock time, in hours and tenths, that maintenance was performed on a job. EMT does not include the clock hours and tenths for cure time, charging time, or leak test when they are being conducted without maintenance personnel actually monitoring the work. Although the EMT is directly related to job man hours, it is not to be confused with total man hours required to complete a job. For example, if five men complete a job in 2 hours of continuous work the EMT is 2 hours and the man hours are 10.0.

p. System Code. The system code is the first two positions of the WUC used to identify the system within the target/equipment on which work is being performed. These codes are found in the applicable WUC manual.

q. Technical Directive Status Code. The technical directive status code is a single character alphabetic code used to indicate the status of compliance with a TD. This code applies to block A35 (action taken) of the VIDS/MAF when reporting TD status. These codes are found in appendix J of OPNAVINST 4790.2H.

r. Technical Directive Codes (Blocks F09 through F19). TD codes are 12 or 13 character codes used to identify a specific TD by type, number, revision, amendment, part, and kit number. These codes apply to the VIDS/MAF when reporting a TD compliance. The first two characters of the TD codes are found in appendix L of OPNAVINST 4790.2H.

s. Transaction Code (Block A32). These codes are two-character numeric codes used to identify the type of data being reported. Transaction codes can be found in WUC manuals and appendix P of OPNAVINST 4790.2H.

t. (H-Z) Failed/Required Material Section. This section is used to document failed parts, identify parts that caused an awaiting parts (AWP) for maintenance situation during repair, and/or record supply requisitions. This section will be used to document failed parts, identify parts that caused AWP during repair, engine identification/information data, and/or supply requisition data.

(1) Index (Block 79). A letter from H through Z is entered on each line that identifies a failed part or a part that caused AWP during repair. When only material requisition is documented, this column is left blank.

(2) Failed Part (Block 08). Each line identifying a failed part will be marked. Failed parts documentation is restricted to those items that contributed to the discrepancy being repaired and components not identified in the removed/old item section of the same VIDS/MAF. Common hardware

(e.g., nuts, screws, washers, etc.) routinely replaced during a maintenance action is not documented as a failed part unless it's failure is the discrepancy. Items documented as removed for cannibalization are not considered failed parts.

(3) Action Taken Code (Block 10). The action taken code that describes the action taken against the item identified in the part number column of the same line is entered. Action taken codes are documented only on lines which have an index (block 79) assigned.

(4) Malfunction Code (Block 11). Malfunction codes are documented only on items which have an index (block 79) assigned.

(5) Manufacturer's Code (Block 14). The manufacturer's code of the failed part or required material is entered on this line.

(6) Part Number (Block 19). The manufacturer's part number of the failed part or required material is entered on this line.

(7) Reference Symbol (Block 34). Reference symbols are alphanumeric codes which identify the piece/part as distinct from other items of the same part number in the same subassembly or circuit. Reference symbols are found in the Illustrated Parts Breakdown (IPB) manual for the component.

(8) Priority (Block 43). The Military Standard Requisitioning and Issue Procedure (MILSTRIP) priority assigned to the material requisitioned is used in this block.

(9) Requisition Number (Block 49). The MILSTRIP requisition number is used in this block.

5.5.5 Sample Documents

5.5.5.1 This section provides information detailing the proper methods for completing VIDS/MAF documents recording various maintenance actions on targets and target equipment.

5.5.5.1.1 Inventory Gain. An inventory gain is the receipt of a target into the Navy inventory system by a reporting custodian (see figure 5-5-5).

a. Distribution: VIDS/MAF Copy 1 to Data Analysis, copies 2 and 4 to QA, copy 3 to Maintenance Control (TDB), copy 5 held by Maintenance Control until verification of copy has been received.

b. Legend: (M) Maintenance control will complete these block items.

c. Entries:

(1) (M) A29 Action Organization. Enter the organization code of the reporting custodian documenting the inventory transaction (appendix K of OPNAVINST 4790.2H).

(2) (M) A32 Transaction Code. Enter 00.

(3) (M) A48 Type Equipment Code. Enter the TEC of the target being gained.

(4) (M) A52 Bureau/Serial Number. Enter the serial number of the target being gained.

(5) (M) F21 Inventory Status Code. Enter 0.

(6) (M) B30 and B34 Completed Line. Enter the effective Julian date and the time of the inventory gain. The effective time (Block B34) will always be rounded to the nearest whole hour.

(7) (M) Entries Required Block. Mark the Logs and Rec blocks.

(8) (M) Discrepancy. Enter gain information.

(9) (M) System/Reason. Enter "Inventory Gain."

d. Signatures: Sign as appropriate.

5.5.5.1.2 Inventory Loss. An inventory loss (transferred, lost, damaged beyond repair, stricken from naval service, etc.) is documented only if the target has previously been gained and in the inventory system (see figure 5-5-6).

a. Distribution: VIDS/MAF Copy 1 to Data Analysis, copies 2 and 4 to QA, copy 3 to Maintenance Control (TDB), copy 5 held by Maintenance Control until verification of copy has been received.

b. Legend: (M) Maintenance control will complete these block items.

c. Entries:

(1) (M) A29 Action Organization. Enter the organization code of the reporting custodian documenting the inventory transaction (appendix K of OPNAVINST 4790.2H).

No. SWP 4826						Copy 1						5 PART FORM USE BALL-POINT PEN PRESS HARD						ENTRIES REQUIRED SIGNATURE NONE LOGS REC <input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> Herring							
WORK CENTER REGISTER, CONTROL AND PROCESSING COPY VIDS/MAF OPNAV 4790/60 (REV. 5-88) S/N 0107-LF-002-5900																									
LOCAL USE				ACCUMULATED WORK HOURS										ACCUMULATED AWM HOURS											
				NAME/SHIFT		TOOL BOX		DATE		MAN HOURS		ELAPSED M/T		DATE		TIME REASON HOURS									
REFERENCE																									
(H-Z) FAILED/REQUIRED MATERIAL																									
79 INDEX		08 F/P		09 AWP		10 A/T		11 MAL		14 MFGR		19 PART NUMBER		34 REF SYMBOL		41 QTY PROJ		43 PRI		45 DATE ORD		49 REQ NO		53 DATE REC	
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		<input type="checkbox"/>		<input type="checkbox"/>																					
		<input type="checkbox"/>		<input type="checkbox"/>				</																	

Figure 5-5-5. Target Inventory Gain.

No. SWP 4826						Copy 1						5 PART FORM USE BALL-POINT PEN PRESS HARD						ENTRIES REQUIRED SIGNATURE NONE LOGS REC <input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> Bacall																	
WORK CENTER REGISTER, CONTROL AND PROCESSING COPY VIDS/MAF OPN/A/ 4790/60 (REV. 5-88) S/N 0107-LF-002-5900																																			
LOCAL USE				ACCUMULATED WORK HOURS												ACCUMULATED AWM HOURS																			
				NAME/SHIFT		TOOL BOX		DATE		MAN HOURS		ELAPSED M/T		DATE		TIME		REASON		HOURS															
REFERENCE																																			
(H-Z) FAILED/REQUIRED MATERIAL																																			
79 INDEX		08 F/P		09 AWP		10 A/T		11 MAL		14 MFGR		19 PART NUMBER		34 REF SYMBOL		41 QTY		43 PROJ		45 DATE ORD		49 REQ NO		53 DATE REC											
	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>																														
	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>																														
	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>																														
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	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>																														
	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>																														
A22 WORK UNIT CODE		A29 ACTION ORG WAW		A32 TRANS 03		A34 MAINT/L		A35 ACT TAKEN		A36 MAL CODE		A39 ITEMS/P		A41 MAN HOURS		A45 ELAPSED M/T		F08 INTERIM		F09 CODE		P11 BASIC NO.		F15 RV		F16 AM		F17 PART		F19 KIT					
A48 TYPE EQUIP N6DF		A52 BU/SER NUMBER 033117		A58 DISCO		A59 T/M		A60 POSIT		A62 FID		A65 SAFETY/EI SER		A69 METER		SE MFGR		A74		INVENTORY F22 PERM LIMIT CODE		F21 0		F28											
REPAIR CYCLE DATE TIME EOC				REMOVED/OLD ITEM E09 MFGR E13 SERIAL NUMBER								INSTALLED/NEW ITEM G08 MFGR G13 SERIAL NUMBER																							
RECEIVED		B08		B12		B16																													
IN WORK		B19		B23		B27		E23 PART NUM-BER				E38 DATE REMOVED				G23 PART NUMBER																			
COMPLETED		B30 5126		B34 1400				E42 TIME/CYCLES		E47 TIME/CYCLES		E52 TIME/CYCLES		G38 TIME/CYCLES		G43 TIME/CYCLES		G48 TIME/CYCLES																	
AWAITING MAINTENANCE B38 B39 B43 B44 B48 B49						DISCREPANCY																													
HOUR S <input type="checkbox"/>						HOUR S <input type="checkbox"/>						HOUR S <input type="checkbox"/>						TDU-34A Tow Target S/N: 033117 Expended.																	
MAINTENANCE/SUPPLY RECORD JOB STATUS DATE TIME EOC						PILOT/INITIATOR																													
CORRECTIVE ACTION																																			
B53 B54 B58 B62																																			
B65 B66 B70 B74																																			
C08 C09 C13 C17																																			
C20 C21 C25 C29																																			
C32 C33 C37 C41																																			
C44 C45 C49 C53																																			
C56 C57 C61 C65																																			
D08 D09 D13 D17																																			
JOB CONTROL NUMBER A08 A11 A14 A17 SUP ORG DAY SER SUP						A19 WORK CENTER						CORRECTED BY						INSPECTED BY				SUPERVISOR Cardenas				MAINT CONTROL									
UP <input type="checkbox"/>						MODEX						PRI		TURN-IN DOCUMENT						SYSTEM/REASON Inventory Loss						MCN									
DOWN <input type="checkbox"/>																																			

Figure 5-5-6. Target Inventory Loss.

(2) (M) A32 Transaction Code. Enter 03.

(3) (M) A48 Type Equipment Code. Enter the TEC of the target involved in the inventory loss.

(4) (M) A52 Bureau/Serial Number. Enter the serial number of the target lost.

(5) (M) F21 Inventory Status Code. Enter 0.

(6) (M) B30 and B34 Completed Line. Enter the effective Julian date and the time of the inventory loss being documented. The effective time (Block B34) will always be rounded to the nearest whole hour.

(7) (M) Entries Required Block. Mark the Logs and Rec blocks.

(8) (M) Discrepancy. Enter loss information.

(9) (M) System/Reason. Enter "Inventory Loss."

d. Signatures: Sign as appropriate.

5.5.5.1.3 Target Preservation. Target preservation will be done in accordance with MRC decks, local maintenance instructions, maintenance manuals, or the appropriate Navy preservation manual. Targets having preservation MRCs will be inspected, and the preservation maintained in accordance with the applicable preservation MRCs. No special inspections need be performed while the target is preserved, other than those listed on the applicable preservation MRCs (see figure 5-5-7).

a. Distribution: VIDS/MAF Copies 1 and 5 to work center, copy 2 to QA, copy 3 to Maintenance Control (VIDS board), and copy 4 to Maintenance Control (TDB).

b. Legend:

(1) (M) Maintenance Control will fill in these block items prior to commencement of maintenance.

(2) (W) The work center will fill in these block items during or after maintenance, as appropriate.

c. Entries:

(1) (M) A08 through A14 Job Control Number. Construct a JCN using the activity's organization code, the Julian date on which the target was inducted for preservation, and a numeric serial number.

(2) (M) A19 Work Center. Enter the work center performing the preservation.

(3) (M) A22 Work Unit Code. Enter 049.

(4) (M) A29 Organization Code. Enter the organization code of the organization performing the maintenance action.

(5) (W) A32 Transaction Code. Enter 11.

(6) (W) A34 Maintenance Level. Enter 1.

(7) (M) A35 Action Taken Code. Enter 0.

(8) (M) A36 Malfunction Code. Enter 000.

(9) (W) A39 Items Processed. Enter 1 upon completion of maintenance.

(10) (W) A41 Man Hours. Enter the total number of Man Hours required by the work center personnel to perform the preservation.

(11) (W) A45 Elapsed Maintenance Time. Enter the EMT (clock time) expended for maintenance.

(12) (M) A48 Type Equipment Code. Enter the TEC of the target type.

(13) (M) A52 Bureau/Serial Number. Enter the serial number of the target.

(14) (M) A58 When Discovered Code. Enter 0.

(15) (M) A59 Type Maintenance Code. Enter D.

(16) (M) B08 and B12 Received Line. Enter the Julian date and time the maintenance action was reported.

(17) (W) B19 and B23 In Work Line. Enter the Julian date and time work was begun.

(18) (W) B30 and B34 Completed Line. Enter the Julian date and time the maintenance action was completed.

(19) (M) Entries Required Block. Mark the Logs and Rec blocks.

(20) (M) Discrepancy. Enter a description of the type of maintenance to be performed.

No. SWP 4826						Copy 1						5 PART FORM USE BALL-POINT PEN PRESS HARD						ENTRIES REQUIRED SIGNATURE NONE LOGS REC <input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> Josephson															
WORK CENTER REGISTER, CONTROL AND PROCESSING COPY VIDS/MAF OPN/AW 4790/60 (REV. 5-88) S/N 0107-LF-002-5900																																	
LOCAL USE						ACCUMULATED WORK HOURS						ACCUMULATED AWM HOURS																					
						NAME/SHIFT		TOOL BOX		DATE		MAN HOURS		ELAPSED M/T		DATE		TIME		REASON		HOURS											
						Marks		15A-2		5299		1 0		1 0																			
REFERENCE																																	
(H-Z) FAILED/REQUIRED MATERIAL																																	
79 INDEX		08 F/P		09 AWP		10 A/T		11 MAL		14 MFGR		19 PART NUMBER		34 REF SYMBOL		41 QTY		PROJ		43 PRI		45 DATE ORD		49 REQ NO		53 DATE REC							
A22 WORK UNIT CODE		A29 ACTION ORG		A32 TRANS		A34 MAINT/L		A35 ACT TAKEN		A36 MAL CODE		A39 ITEMS/P		A41 MAN HOURS		A45 ELAPSED M/T		F08 INTERIM		TECHNICAL DIRECTIVE IDENTIFICATION		F09 CODE		P11 BASIC NO.		F15 RV		F16 AM		F17 PART		F19 KIT	
049		AC3		11		1		0		000		1		1 0		1 0																	
A48 TYPE EQUIP		A52 BU/SER NUMBER		A58 DISCO		A59 T/M		A60 POSIT		A62 FID		A65 SAFETY/EI SER		A69 METER		SE MFGR		A74		INVENTORY F22 PERM LIMIT CODE		F28											
MFDA		998765		0		D														F21													
REPAIR CYCLE				REMOVED/OLD ITEM				INSTALLED/NEW ITEM																									
DATE TIME EOC				E09 MFGR E13 SERIAL NUMBER				G08 MFGR G13 SERIAL NUMBER																									
RECEIVED		B08 5299		B12 0800		B16																											
IN WORK		B19 5299		B23 0800		B27		E23 PART NUM-BER				E38 DATE REMOVED				G23 PART NUMBER																	
COMPLETED		B30 5299		B34 1900				E42 TIME/CYCLES		E47 TIME/CYCLES		E52 TIME/CYCLES		G38 TIME/CYCLES		G43 TIME/CYCLES		G48 TIME/CYCLES															
AWAITING MAINTENANCE								DISCREPANCY																									
B38 B39 B43 B44 B48 B49								Preserve target IAW appropriate decontamination manual instructions.																									
HOUR S HOUR S HOUR S																																	
MAINTENANCE/SUPPLY RECORD								PILOT/INITIATOR Davis																									
JOB STATUS DATE TIME EOC								CORRECTIVE ACTION																									
B53 B54 B58 B62								Preserve target IAW appropriate decontamination manual instructions.																									
B65 B66 B70 B74																																	
C08 C09 C13 C17																																	
C20 C21 C25 C29																																	
C32 C33 C37 C41																																	
C44 C45 C49 C53																																	
C56 C57 C61 C65																																	
D08 D09 D13 D17																																	
JOB CONTROL NUMBER								CORRECTED BY Marks																									
A08 ORG AC3								INSPECTED BY Michaelson																									
A11 DAY 299								SUPERVISOR Robertson																									
A14 SER 109								MAINT CONTROL Davis																									
A17 SUP 15A																																	
A19 WORK CENTER								UP <input type="checkbox"/>																									
								MODEX PRI TURN-IN DOCUMENT SYSTEM/REASON MCN																									
								DOWN <input checked="" type="checkbox"/>																									
								Preservation																									

Figure 5-5-7. Target Preservation.

(21) (W) Corrective Action. Enter a description of the completed maintenance action performed.

(22) (M) Up/Down Block. Circle the Down arrow.

(23) (M) System/Reason Block. Enter "Preservation".

d. Signatures: Sign as appropriate.

5.5.5.1.4 Target Depreservation. An example of a target depreservation VIDS/MAF is shown in figure 5-5-8.

a. Distribution: VIDS/MAF Copies 1 and 5 to work center, copy 2 to QA, copy 3 to Maintenance Control (VIDS board), and copy 4 to Maintenance Control (TDB).

b. Legend:

(1) (M) Maintenance Control will fill in these block items prior to commencement of maintenance.

(2) (W) The work center will fill in these block items during or after maintenance, as appropriate.

c. Entries:

(1) (M) A08 through A14 Job Control Number. Construct a JCN using the activity's organization code, the Julian date on which the target was inducted for depreservation, and a numeric serial number.

(2) (M) A19 Work Center. Enter the work center performing the maintenance.

(3) (M) A22 Work Unit Code. Enter 049.

(4) (M) A29 Organization Code. Enter the organization code of the organization performing the maintenance.

(5) (W) A32 Transaction Code. Enter 11.

(6) (W) A34 Maintenance Level. Enter 1.

(7) (M) A35 Action Taken Code. Enter 0.

(8) (W) A39 Items Processed. Enter 1 upon completion of maintenance.

(9) (W) A41 Man Hours. Enter the total number of Man Hours required by the work center personnel to perform the maintenance action.

(10) (W) A45 Elapsed Maintenance Time. Enter the EMT (clock time) expended for maintenance.

(11) (M) A48 Type Equipment Code. Enter the TEC of the target type.

(12) (M) A52 Bureau/Serial Number. Enter the serial number of the target.

(13) (M) A58 When Discovered Code. Enter 0.

(14) (M) A59 Type Maintenance Code. Enter D.

(15) (M) B08 and B12 Received Line. Enter the Julian date and time the maintenance action was reported.

(16) (W) B19 and B23 In Work Line. Enter the Julian date and time work was begun.

(17) (W) B30 and B34 Completed Line. Enter the Julian date and time the maintenance action was completed.

(18) (M) Entries Required Block. Mark the Logs and Rec blocks.

(19) (M) Discrepancy. Enter a description of the type of maintenance to be performed.

(20) (W) Corrective Action. Enter a description of the completed maintenance action performed.

(21) (M) Up/Down Block. Circle the Down arrow.

(22) (M) System/Reason Block. Enter "Depreservation".

d. Signatures: Sign as appropriate.

5.5.5.1.5 Transfer Inspection. A transfer inspection is an inspection performed at the time a reporting custodian transfers a target. Activities may elect to increase the depth of any transfer inspection if the equipment condition indicates such action may be warranted (see figure 5-5-9).

a. Distribution: VIDS/MAF Copies 1 and 5 to work center, copy 2 to QA, copy 3 to Maintenance Control (VIDS board), and copy 4 to Maintenance Control (TDB).

[illegible]

Figure 5-5-8. Target Depreservation.

[illegible]

Figure 5-5-9. Transfer Inspection.

b. Legend:

(1) (M) Maintenance Control will fill in these block items prior to commencement of maintenance.

(2) (W) The work center will fill in these block items during or after maintenance, as appropriate.

c. Entries:

(1) (M) A08 through A14 Job Control Number. Construct a JCN using the activity's organization code, the Julian date on which the target was inducted for inspection, and a numeric serial number.

(2) (M) A19 Work Center. Enter the work center performing the inspection.

(3) (M) A22 Work Unit Code. Enter 030.

(4) (M) A29 Organization Code. Enter the organization code of the organization performing the inspection.

(5) (W) A32 Transaction Code. Enter 11.

(6) (W) A34 Maintenance Level. Enter 1.

(7) (M) A35 Action Taken Code. Enter 0.

(8) (M) A36 Malfunction Code. Enter 000.

(9) (W) A39 Items Processed. Enter 1 upon completion of inspection.

(10) (W) A41 Man Hours. Enter the total number of Man Hours required by the work center personnel to perform the inspection.

(11) (W) A45 Elapsed Maintenance Time. Enter the EMT (clock time) expended for inspection.

(12) (M) A48 Type Equipment Code. Enter the TEC of the target type.

(13) (M) A52 Bureau/Serial Number. Enter the serial number of the target.

(14) (M) A58 When Discovered Code. Enter 0.

(15) (M) A59 Type Maintenance Code. Enter E.

(16) (M) B08 and B12 Received Line. Enter the Julian date and the time the inspection was received (due).

(17) (W) B19 and B23 In Work Line. Enter the Julian date and time the inspection was begun.

(18) (W) B30 and B34 Completed Line. Enter the Julian date and time the inspection was completed.

(19) (M) Entries Required Block. Mark the Logs and Rec blocks.

(20) (M) Discrepancy. Enter a description of the target inspection due.

(21) (W) Corrective Action. Upon completion of inspection, enter a description of the inspection completed and the appropriate reference(s).

(22) (M) Up/Down Block. Circle the Down arrow.

(23) (M) System/Reason. Enter "Transfer Inspection".

d. Signatures: Sign as appropriate.

5.5.5.1.6 Acceptance Inspection/Initial buildup. An acceptance inspection is performed at the time a reporting custodian accepts a newly assigned target (see figure 5-5-10). It includes an inventory of all equipment listed in the target inventory record, configuration verification, and target buildup. Activities may elect to increase the depth of inspection if the equipment condition indicates such action is warranted. Discrepancies discovered during their initial acceptance inspection of targets received from a contractor as newly manufactured and those reworked by Navy, commercial, or inter-service activity will be reported in accordance with volume II, chapter 5.2, paragraph 5.2.3 of this instruction (see figure 5-5-11). A Product Quality Deficiency Report (PQDR) will be used to report all critical and major discrepancies found by the using activity on targets received from a contractor or rework activity. Minor discrepancies will not be reported unless they are repeat items or it can be determined that they were contractor caused.

a. Distribution: VIDS/MAF Copies 1 and 5 to work center, copy 2 to QA, copy 3 to Maintenance Control (VIDS board), and copy 4 to Maintenance Control (TDB).

b. Legend:

(1) (M) Maintenance Control will fill in these block items prior to commencement of maintenance.

(2) (W) The work center will fill in these block items during or after maintenance, as appropriate.

No. SWP 4826 Copy 1 5 PART FORM WORK CENTER REGISTER, CONTROL AND PROCESSING COPY USE BALL-POINT PEN PRESS VIDS/MAF OPNAV 4790/60 (REV. 5-88) S/N 0107-LF-002-5900 HARD										ENTRIES REQUIRED SIGNATURE NONE LOGS REC <input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> Rudolph			
LOCAL USE		ACCUMULATED WORK HOURS						ACCUMULATED AWM HOURS					
		NAME/SHIFT	TOOL BOX	DATE	MAN HOURS	ELAPSED M/T	DATE	TIME	REASON	HOURS			
		Claus	15A-3	5359	2 0	2 0							
REFERENCE													
(H-Z) FAILED/REQUIRED MATERIAL													
79 INDEX	08 F/P	09 AWP	10 A/T	11 MAL	14 MFGR	19 PART NUMBER	34 REF SYMBOL	41 QTY	43 PROJ	45 DATE ORD	49 REQ NO	53 DATE REC	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>											
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>											
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>											
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>											
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>											
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>											
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>											
A22 WORK UNIT CODE 030	A29 ACTION ORG A13	A32 TRANS 11	A34 MAINT/L 1	A35 ACT TAKEN 0	A36 MAL CODE 000	A39 ITEMS/P 1	A41 MAN HOURS 2 0	A45 ELAPSED M/T 2 0	F08 INTERIM <input type="checkbox"/>	TECHNICAL DIRECTIVE IDENTIFICATION			
A48 TYPE EQUIP M6DC	A52 BU/SER NUMBER 000753	A58 DISCO E	A59 T/M G	A60 POSIT	A62 FID	A65 SAFETY/EI SER	A69 METER	SE MFGR	A74	INVENTORY F22 PERM LIMIT CODE F21		F28	
REPAIR CYCLE DATE TIME EOC				REMOVED/OLD ITEM E09 MFGR E13 SERIAL NUMBER				INSTALLED/NEW ITEM G08 MFGR G13 SERIAL NUMBER					
RECEIVED				B08 5359	B12 0900	B16							
IN WORK				B19 5359	B23 0930	B27	E23 PART NUMBER		E38 DATE REMOVED		G23 PART NUMBER		
COMPLETED				B30 5359	B34 1130		E42 TIME/CYCLES		E47 TIME/CYCLES	E52 TIME/CYCLES	G38 TIME/CYCLES	G43 TIME/CYCLES	
AWAITING MAINTENANCE B38 B39 B43 B44 B48 B49 HOUR S HOUR S HOUR S				DISCREPANCY									
				Perform Acceptance Inspection IAW OPNAVINST 8000.16A									
MAINTENANCE/SUPPLY RECORD JOB STATUS DATE TIME EOC				PILOT/INITIATOR K. Kringle									
				CORRECTIVE ACTION									
				Completed Acceptance Inspection IAW OPNAVINST 8000.16A									
				CF REQ <input type="checkbox"/> QA REQ <input type="checkbox"/>									
CORRECTED BY Claus		INSPECTED BY Scrooge		SUPERVISOR Cratcheit		MAINT CONTROL Kringle							
UP <input type="checkbox"/>		MODEX <input checked="" type="checkbox"/>		PRI		TURN-IN DOCUMENT		SYSTEM/REASON Acceptance Inspection		MCN			
DOWN <input checked="" type="checkbox"/>													
JOB CONTROL NUMBER A08 ORG A11 DAY A14 SER A17 SUP A19 WORK CENTER A13 359 081 15A													

Figure 5-5-10. Acceptance Inspection/Initial Buildup.

No. SWP 4826 Copy 1 5 PART FORM WORK CENTER REGISTER, CONTROL AND PROCESSING COPY USE BALL-POINT PEN PRESS VIDS/MAF OPNAV 4790/60 (REV. 5-88) S/N 0107-LF-002-5900 HARD										ENTRIES REQUIRED SIGNATURE NONE LOGS REC <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>			
LOCAL USE		ACCUMULATED WORK HOURS						ACCUMULATED AWM HOURS					
		NAME/SHIFT	TOOL BOX	DATE	MAN HOURS	ELAPSED M/T	DATE	TIME	REASON	HOURS			
		Jones	15A-7	5359	0 1	0 1							
REFERENCE													
(H-Z) FAILED/REQUIRED MATERIAL													
79 INDEX	08 F/P	09 AWP	10 A/T	11 MAL	14 MFGR	19 PART NUMBER	34 REF SYMBOL	41 QTY	PROJ	43 PRI	45 DATE ORD	49 REQ NO	53 DATE REC
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>											
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>											
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>											
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>											
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>											
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>											
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>											
A22 WORK UNIT CODE 9241160	A29 ACTION ORG A13	A32 TRANS 11	A34 MAINT/L 1	A35 ACT TAKEN B	A36 MAL CODE 105	A39 ITEMS/P 1	A41 MAN HOURS 0 1	A45 ELAPSED M/T 0 1	F08 INTERIM <input type="checkbox"/>	TECHNICAL DIRECTIVE IDENTIFICATION			
A48 TYPE EQUIP M6DC	A52 BU/SER NUMBER 000753	A58 DISCO G	A59 T/M E	A60 POSIT	A62 FID	A65 SAFETY/EI SER	A69 METER	SE MFGR	A74	INVENTORY F22 PERM LIMIT CODE F21		F28	
REPAIR CYCLE DATE TIME EOC				REMOVED/OLD ITEM E09 MFGR E13 SERIAL NUMBER				INSTALLED/NEW ITEM G08 MFGR G13 SERIAL NUMBER					
RECEIVED				B08 5359	B12 1130	B16							
IN WORK				B19 5359	B23 1200	B27	E23 PART NUMBER	E38 DATE REMOVED	G23 PART NUMBER				
COMPLETED				B30 5359	B34 1208		E42 TIME/CYCLES	E47 TIME/CYCLES	E52 TIME/CYCLES	G38 TIME/CYCLES	G43 TIME/CYCLES	G48 TIME/CYCLES	
AWAITING MAINTENANCE B38 B39 B43 B44 B48 B49 HOUR HOUR HOUR S S S				DISCREPANCY Pitch Change Actuator Fitting Leaking.									
MAINTENANCE/SUPPLY RECORD JOB STATUS DATE TIME EOC				CORRECTIVE ACTION Tightened Pitch Change Actuator Fitting.									
B53	B54	B58	B62	<div style="text-align: right;">PILOT/INITIATOR Smiley</div>									
B65	B66	B70	B74										
C08	C09	C13	C17	<div style="text-align: right;">CF REQ QA REQ <input type="checkbox"/> <input type="checkbox"/></div>									
C20	C21	C25	C29										
C32	C33	C37	C41	CORRECTED BY INSPECTED BY SUPERVISOR MAINT CONTROL									
C44	C45	C49	C53										
C56	C57	C61	C65	UP <input type="checkbox"/> MODEx PRI TURN-IN DOCUMENT SYSTEM/REASON MCN									
D08	D09	D13	D17										
JOB CONTROL NUMBER A08 A11 A14 A17 ORG DAY SER SUP A13 359 102 15A				A19 WORK CENTER 15A				Pitch Change Act.					

Figure 5-5-11. Repair of Discrepancy Discovered during Acceptance Inspection.

c. Entries:

(1) (M) A08 through A14 Job Control Number. Construct a JCN using the activity's organization Code, the Julian date on which the target was inducted for inspection, and a numeric serial number.

(2) (M) A19 Work Center. Enter the work center performing the inspection.

(3) (M) A22 Work Unit Code. Enter 030.

(4) (M) A29 Organization Code. Enter the organization code of the organization performing the maintenance action.

(5) (W) A32 Transaction Code. Enter 11.

(6) (W) A34 Maintenance Level. Enter 1.

(7) (M) A35 Action Taken Code. Enter 0.

(8) (M) A36 Malfunction Code. Enter 000.

(9) (W) A39 Items Processed. Enter 1 upon completion of inspection.

(10) (W) A41 Man Hours. Enter the total number of Man Hours required by the work center personnel to perform the inspection.

(11) (W) A45 Elapsed Maintenance Time. Enter the EMT (clock time) expended for maintenance.

(12) (M) A48 Type Equipment Code. Enter the TEC of the target type being inspected.

(13) (M) A52 Bureau/Serial Number. Enter the serial number of the target.

(14) (M) A58 When Discovered Code. Enter E.

(15) (M) A59 Type Maintenance Code. Enter G.

(16) (M) B08 and B12 Received Line. Enter the Julian date and time the inspection was received (due).

(17) (W) B19 and B23 In Work Line. Enter the Julian date and time the inspection was begun.

(18) (W) B30 and B34 Completed Line. Enter the Julian date and time the inspection was completed.

(19) (M) Entries Required Block. Mark the Logs and Rec blocks.

(20) (M) Discrepancy. Enter a description of the target inspection due.

(21) (W) Corrective Action. Upon completion of inspection, enter a description of the inspection completed and the appropriate reference(s).

(22) (M) Up/Down Block. Circle the Down arrow.

(23) (M) System/Reason. Enter "Acceptance Inspection".

d. Signatures: Sign as appropriate.

e. Repair of Discrepancy Discovered During Acceptance Inspection.

f. Legend:

(1) (I) The initiator/originator of the maintenance action will fill in these block items at the time the discrepancy is discovered.

(2) (M) Maintenance Control will fill in these block items prior to commencement of maintenance.

(3) (W) The work center will fill in these block items during or after maintenance, as appropriate.

(4) (m) Material Control will fill in these block items on copy 1 of the VIDS/MAF and will notify Maintenance Control to annotate copy 3 on the VIDS board.

g. Entries:

(1) (M) A08 through A14 Job Control Number. Construct a JCN using the activity's organization code, the Julian date on which the discrepancy was reported, and a numeric serial number.

(2) (M) A19 Work Center. Enter the work center performing the maintenance.

(3) (M) A22 Work Unit Code. Enter the WUC of the item being repaired/replaced.

(4) (M) A29 Organization Code. Enter the organization code of the organization performing the maintenance action.

(5) (W) A32 Transaction Code. Enter the appropriate transaction code.

- (6) (W) A34 Maintenance Level. Enter 1.
- (7) (W) A35 Action Taken Code. Enter the appropriate action taken code.
- (8) (W) A36 Malfunction Code. Enter the appropriate malfunction code.
- (9) (W) A39 Items Processed. Enter the total number of items processed.
- (10) (W) A41 Man hours. Enter the total number of Man Hours required by the work center personnel to perform the maintenance action.
- (11) (W) A45 Elapsed Maintenance Time. Enter the EMT (clock time) expended for maintenance.
- (12) (I) A48 Type Equipment Code. Enter the TEC of the target type.
- (13) (I) A52 Bureau/Serial Number. Enter the serial number of the target.
- (14) (I) A58 When Discovered Code. Enter G.
- (15) (M) A59 Type Maintenance Code. Enter E.
- (16) (I) B08 and B12 Received Line. Enter the Julian date and time the maintenance action was reported.
- (17) (W) B19 and B23 In Work Line. Enter the Julian date and time the work was begun.
- (18) (W) B30 and B34 Completed Line. Enter the Julian date and time the maintenance action was completed.
- (19) (W) E08 and G08 Manufacturer's Code. Enter the manufacturer's code of the component being removed/installed, if applicable.
- (20) (W) E13 and G13 Serial Number. Enter the serial number of the component being removed/installed, if applicable.
- (21) (W) E23 and G23 Part Number. Enter the part number of the component being removed/installed, if applicable.
- (22) (W) E38 Date Removed. Enter the Julian date the component was removed, if applicable.
- (23) (W) E42 and G38 Time/Cycles. Enter the time/cycle of the component, if applicable.
- (24) (M) 79 (H-Z) Failed/Required Material Index. If an engine component is involved, enter H.
- (25) (M) 10 (H-Z) Failed/Required Material Action Taken. If an engine component is involved, enter 0.
- (26) (M) 11 (H-Z) Failed/Required Material Malfunction Code. If an engine component is involved, enter 000.
- (27) (M) 14 (H-Z) Failed/Required Material Manufacturer's Code. Enter the manufacturer's code, if applicable. If an engine component is involved, enter the TEC of the engine and the manufacturer's code of the component on the line below.
- (28) (M) 19 (H-Z) Failed/Required Material Part Number. Enter the part number, if applicable. If an engine or engine component is involved, enter the serial number of the engine and the engine time prefixed by an E. On the line below, enter the part number of the engine component.
- (29) (M) 41 (H-Z) Failed/Required Material Quantity. Enter the quantity, if applicable. If an engine component is involved, enter 0 for the engine and the quantity of components on the line below.
- (30) (M) (H-Z) Failed/Required Material Project. Enter the project. If an engine component is involved, enter the project on the same line as the component information.
- (31) (M) 45 (H-Z) Failed/Required Material Date Ordered. Enter the Julian date the item was ordered, if applicable.
- (32) (M) 49 (H-Z) Failed/Required Material Requisition Number. Enter the requisition number, if applicable. If an engine component is involved, enter the requisition number on the same line as the component information.
- (33) (M) 53 (H-Z) Failed/Required Material Date Received. Enter the Julian date the part was received, if applicable.
- (34) (M) Entries Required. Mark the appropriate block(s).
- (35) (M) Discrepancy. Enter a description of the maintenance to be performed.
- (36) (W) Corrective Action. Upon completion, enter a description of the maintenance performed.
- (37) (M) Up/Down Block. Circle the appropriate arrow.

(38) (M) Priority. Enter the priority, as appropriate.

(39) (M) System/Reason. Enter the system or reason.

h. Signatures. Sign as appropriate.

5.5.5.1.7 Conditional Inspection. Conditional inspections on targets are unscheduled inspections required as a result of specific over limit conditions. It includes tests or inspections for determining the condition of the target where such test or inspections are not a part of an acceptance/initial buildup, post-launch, or prelaunch inspections. Such inspections include retesting on the console or combined systems test set. Also included is any test or inspection required to determine target condition after handling incidents such as droppage, aborted launches, hot starts, etc. Sample VIDS/MAFs for a conditional inspection and a repair action of a discrepancy discovered during a conditional inspection are shown in figures 5-5-12 and 5-5-13, respectively.

a. Distribution: VIDS/MAFs Copies 1 and 5 to work center, copy 2 to QA, copy 3 to Maintenance Control (VIDS board), and copy 4 to Maintenance Control (TDB).

b. Legend:

(1) (I) The initiator/originator of the maintenance action will fill in these block items at the time the discrepancy is discovered.

(2) (M) Maintenance Control will fill in these block items prior to commencement of maintenance.

(3) (W) The work center will fill in these block items during or after maintenance, as appropriate.

(4) (M) Material Control will fill in these block items on copy 1 of the VIDS/MAF and will notify Maintenance Control to annotate copy 3 on the VIDS board.

c. Entries:

(1) (M) A08 through A14 Job Control Number. Construct a JCN using the activity's organization code, the Julian date on which the target was inducted for inspection, and a numeric serial number.

(2) (M) A19 Work Center. Enter the work center performing the inspection.

(3) (M) A22 Work Unit Code. Enter 030.

(4) (W) A29 Organization Code. Enter the organization code of the organization performing the inspection.

(5) (W) A32 Transaction Code. Enter 11 for targets or 12 for engines.

(6) (W) A34 Maintenance Level. Enter 1.

(7) (M) A35 Action Taken Code. Enter 0.

(8) (M) A36 Malfunction Code. Enter 000.

(9) (W) A39 Items Processed. Enter 1 upon completion of the inspection.

(10) (W) A41 Man Hours. Enter the total number of Man Hours required by work center personnel to perform the inspection.

(11) (W) A45 Elapsed Maintenance Time. Enter the EMT (clock time) expended for maintenance.

(12) (M) A48 Type Equipment Code. Enter the TEC of the target type being inspected.

(13) (M) A52 Bureau/Serial Number. Enter the serial number of the target.

(14) (M) A58 When Discovered Code. Enter 0.

(15) (M) A59 Type Maintenance Code. Enter S.

(16) (M) B08 and B12 Received Line. Enter the Julian date and time the inspection was received (due).

(17) (W) B19 and B23 In Work Line. Enter the Julian date and time the inspection was begun.

(18) (W) B30 and B34 Completed Line. Enter the Julian date and time the inspection was completed.

(19) (W) E08 and G08 Manufacturer's Code. Enter the manufacturer's code of the component being removed/installed, if applicable.

(20) (W) E13 and G13 Serial Number. Enter the serial number of the component being removed/installed, if applicable.

(21) (W) E23 and G23 Part Number. Enter the part number of the component being removed/installed, if applicable.

(22) (W) E38 Date Removed. Enter the Julian date the component was removed, if applicable.

No.	SWP 4826																			
									Copy 1		5 PART FORM USE BALL-POINT PEN PRESS HARD					ENTRIES REQUIRED SIGNATURE <div>NONE LOGS REC</div> <div><input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/></div> Heinlein				
WORK CENTER REGISTER, CONTROL AND PROCESSING COPY VIDS/MAF OPN/A/ 4790/60 (REV. 5-88) S/N 0107-LF-002-5900																				
LOCAL USE				ACCUMULATED WORK HOURS							ACCUMULATED AWM HOURS									
				NAME/SHIFT	TOOL BOX	DATE	MAN HOURS		ELAPSED M/T		DATE	TIME	REASON	HOURS						
				Lewis	15A-1	5175	1 0		1 0											
REFERENCE																				
(H-Z) FAILED/REQUIRED MATERIAL																				
79 INDEX	08 F/P	09 AWP	10 A/T	11 MAL	14 MFGR	19 PART NUMBER	34 REF SYMBOL	41 QTY	PROJ	43 PRI	45 DATE ORD	49 REQ NO	53 DATE REC							
	<input type="checkbox"/>	<input type="checkbox"/>																		
	<input type="checkbox"/>	<input type="checkbox"/>																		
	<input type="checkbox"/>	<input type="checkbox"/>																		
	<input type="checkbox"/>	<input type="checkbox"/>																		
	<input type="checkbox"/>	<input type="checkbox"/>																		
	<input type="checkbox"/>	<input type="checkbox"/>																		
A22 WORK UNIT CODE	A29 ACTION ORG	A32 TRANS	A34 MAINT/L	A35 ACT TAKEN	A36 MAL CODE	A39 ITEMS/P	A41 MAN HOURS	A45 ELAPSED M/T	F08 INTERIM	TECHNICAL DIRECTIVE IDENTIFICATION					F19 KIT					
030	WAW	11	1	0	000	1	.1 0	1 0	<input type="checkbox"/>	F09 CODE	P11 BASIC NO.	F15 RV	F16 AM	F17 PART						
A48 TYPE EQUIP	A52 BU/SER NUMBER	A58 DISCO	A59 T/M	A60 POSIT	A62 FID	A65 SAFETY/EI SER	A69 METER	SE MFGR	A74	INVENTORY F22 PERM LIMIT CODE				F28						
MFDA	188921	0	S									F21								
REPAIR CYCLE				REMOVED/OLD ITEM				INSTALLED/NEW ITEM												
DATE TIME EOC				E09 MFGR	E13 SERIAL NUMBER				G08 MFGR	G13 SERIAL NUMBER										
RECEIVED	B08 5175	B12 0800	B16																	
IN WORK	B19 5175	B23 0800	B27	E23 PART NUM-BER	E38 DATE REMOVED			G23 PART NUMBER												
COMPLETED	B30 5175	B34 0900		E42 TIME/CYCLES	E47 TIME/CYCLES	E52 TIME/CYCLES	G38 TIME/CYCLES	G43 TIME/CYCLES	G48 TIME/CYCLES											
AWAITING MAINTENANCE				DISCREPANCY																
B38 B39 B43 B44 B48 B49	Check Engine For Hot Start.																			
HOUR S <input type="checkbox"/>	HOUR S <input type="checkbox"/>	HOUR S <input type="checkbox"/>																		
											PILOT/INITIATOR Bradbury									
CORRECTIVE ACTION																				
Inspection Completed.																				
CORRECTED BY Burroughs	INSPECTED BY Herbert				SUPERVISOR Tolkien				MAINT CONTROL Clarke											
UP <input type="checkbox"/>	MODEX				PRI	TURN-IN DOCUMENT				SYSTEM/REASON				MCN						
DOWN <input checked="" type="checkbox"/>										Hot Start										
JOB CONTROL NUMBER	A19 WORK CENTER																			
A08 ORG DAY SUP WAW	A11 175	A14 100	A17 15A																	

Figure 5-5-12. Conditional Inspection.

No. SWP 4826						Copy 1																		
WORK CENTER REGISTER, CONTROL AND PROCESSING COPY VIDS/MAF OPNAV 4790/60 (REV. 5-88) S/N 0107-LF-002-5900									5 PART FORM USE BALL-POINT PEN PRESS HARD															
									ENTRIES REQUIRED SIGNATURE <div>NONE LOGS REC</div> <div><input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></div> Heinlein															
LOCAL USE			ACCUMULATED WORK HOURS						ACCUMULATED AWM HOURS															
			NAME/SHIFT		TOOL BOX		DATE		MAN HOURS		ELAPSED M/T		DATE		TIME		REASON		HOURS					
			Lewis		15A-7		5175		1 0		1 0													
REFERENCE																								
(H-Z) FAILED/REQUIRED MATERIAL																								
79 INDEX		08 F/P	09 AWP	10 A/T	11 MAL	14 MFGR	19 PART NUMBER		34 REF SYMBOL		41 QTY	PROJ	43 PRI	45 DATE ORD		49 REQ NO		53 DATE REC						
H	<input type="checkbox"/>	<input type="checkbox"/>	0	000	JUDA1	118769 E0001					0													
	<input type="checkbox"/>	<input type="checkbox"/>																						
	<input type="checkbox"/>	<input type="checkbox"/>																						
	<input type="checkbox"/>	<input type="checkbox"/>																						
	<input type="checkbox"/>	<input type="checkbox"/>																						
	<input type="checkbox"/>	<input type="checkbox"/>																						
	<input type="checkbox"/>	<input type="checkbox"/>																						
A22 WORK UNIT CODE	A29 ACTION ORG		A32 TRANS		A34 MAINT/L		A35 ACT TAKEN		A36 MAL CODE		A39 ITEMS/P		A41 MAN HOURS		A45 ELAPSED M/T		F08 INTERIM	TECHNICAL DIRECTIVE IDENTIFICATION						
23V80	WAW		12		1		C		719		1		1 0		1 0		<input type="checkbox"/>							
A48 TYPE EQUIP		A52 BU/SER NUMBER		A58 DISCO		A59 T/M		A60 POSIT		A62 FID		A65 SAFETY/EI SER		A69 METER		SE MFGR		A74 INVENTORY F22 PERM LIMIT CODE		F28				
MFDA		188921		0		S												F21						
REPAIR CYCLE				REMOVED/OLD ITEM								INSTALLED/NEW ITEM												
DATE TIME EOC				E09 MFGR				E13 SERIAL NUMBER				G08 MFGR				G13 SERIAL NUMBER								
RECEIVED		B08	B12	B16																				
		5175	0900																					
IN WORK		B19	B23	B27	E23 PART NUM-BER				E38 DATE REMOVED				G23 PART NUMBER											
		5175	0900																					
COMPLETED		B30	B34		E42 TIME/CYCLES		E47 TIME/CYCLES		E52 TIME/CYCLES		G38 TIME/CYCLES		G43 TIME/CYCLES		G48 TIME/CYCLES									
		5175	1000																					
AWAITING MAINTENANCE				DISCREPANCY																				
B38 B39 B43 B44 B48 B49				Broken Wire On Engine Wire Harness.																				
HOUR HOUR HOUR																								
S S S																								
MAINTENANCE/SUPPLY RECORD				CORRECTIVE ACTION																				
JOB STATUS DATE TIME EOC				Fixed Broken Wire On Engine Wire Harness.																				
B53		B54		B58		B62																		
B65		B66		B70		B74																		
C08		C09		C13		C17																		
C20		C21		C25		C29																		
C32		C33		C37		C41																		
C44		C45		C49		C53																		
C56		C57		C61		C65																		
D08		D09		D13		D17																		
JOB CONTROL NUMBER				CORRECTED BY INSPECTED BY SUPERVISOR MAINT CONTROL																				
A08 DAY A14 SER A17 SUP				Burroughs				Hubert				Tolkien				Clarke								
WAW 175 T09				UP <input type="checkbox"/>				MODEX <input checked="" type="checkbox"/>				PRI				TURN-IN DOCUMENT				SYSTEM/REASON				MCN
				DOWN <input checked="" type="checkbox"/>												Engine Wire								

Figure 5-5-13. Repair Action for Discrepancy Discovered During Condition Inspection.

(23) (W) E42 and G38 Time/Cycles. Enter the time/cycle of the component, if applicable.

(24) (M) 79 (H-Z) Failed/Required Material Index. If an engine is being inspected, enter H. If more than one engine is being inspected, enter the next alpha character (I, J, etc.), as required.

(25) (M) 10 (H-Z) Failed/Required Material Action Taken. If an engine is being inspected, enter 0.

(26) (M) 11 (H-Z) Failed/Required Material Malfunction Code. If an engine is being inspected, enter 000.

(27) (M) 14 (H-Z) Failed/Required Material Manufacturer's Code. If an engine is being inspected, enter the TEC of the engine.

(28) (M) 19 (H-Z) Failed/Required Material Part Number. If an engine is being inspected, enter the serial number of the engine and the engine time prefixed by an E.

(29) (M) 41 (H-Z) Failed/Required Material Quantity. Enter 0.

(30) (M) Entries Required. Mark the appropriate block(s).

(31) (M) Discrepancy. Enter a description of the target inspection due.

(32) (W) Corrective Action. Upon completion of inspection, enter "Inspection Completed."

(33) (M) Up/Down. Circle the Down arrow.

(34) (M) Priority. Enter the priority.

(35) (M) System/Reason. Enter the system or reason.

d. Signatures: Sign as appropriate.

e. Repair Action For Discrepancy Discovered During Conditional Inspection

f. Legend:

(1) (I) The initiator/originator of the maintenance action will fill in these block items at the time the discrepancy is discovered.

(2) (M) Maintenance Control will fill in these block items prior to commencement of maintenance.

(3) (W) The work center will fill in these items during or after maintenance, as appropriate.

(4) (M) Material Control will fill in these block items on copy 1 of the VIDS/MAF and will notify Maintenance Control to annotate copy 3 on the VIDS board.

g. Entries:

(1) (M) A08 through A14 Job Control Number. Construct a JCN using the activity's organization code, the Julian date on which the target was inducted for maintenance, and a numeric serial number.

(2) (M) A19 Work Center. Enter the work center performing the maintenance.

(3) (M) A22 Work Unit Code. Enter the WUC of the item being repaired/replaced.

(4) (W) A29 Action Organization. Enter the organization code of the organization performing the maintenance action.

(5) (W) A32 Transaction Code. Enter the appropriate transaction code.

(6) (W) A34 Maintenance Level. Enter 1.

(7) (M) A35 Action Taken Code. Enter the appropriate action taken code.

(8) (M) A36 Malfunction Code. Enter the appropriate malfunction code.

(9) (W) A39 Items Processed. Enter the total number of items processed.

(10) (W) A41 Man Hours. Enter the total number of Man Hours required by work center personnel to perform the maintenance action.

(11) (W) A45 Elapsed Maintenance Time. Enter the EMT (clock time) expended for maintenance.

(12) (M) A48 Type Equipment Code. Enter the TEC of the target type.

(13) (M) A52 Bureau/Serial Number. Enter the serial number of the target.

(14) (M) A58 When Discovered Code. Enter Q.

(15) (M) A59 Type Maintenance Code. Enter S.

(16) (M) B08 and B12 Received Line. Enter the Julian date and time the maintenance action was reported.

(17) (W) B19 and B23 In Work Line. Enter the Julian date and time the work was begun.

(18) (W) B30 and B34 Completed Line. Enter the Julian date and time the maintenance action was completed.

(19) (W) E08 and G08 Manufacturer's Code. Enter the manufacturer's code of the component being removed/installed, if applicable.

(20) (W) E13 and G13 Serial Number. Enter the serial number of the component being removed/installed, if applicable.

(21) (W) E23 and G23 Part Number. Enter the part number of the component being removed/installed, if applicable.

(22) (W) E38 Date Removed. Enter the Julian date the component was removed, if applicable.

(23) (W) E42 and G38 Time/Cycles. Enter the time/cycle of the component, if applicable.

(24) (M) 79 (H-Z) Failed/Required Material Index. If an engine component is involved, enter H.

(25) (M) 10 (H-Z) Failed/Required Material Action Taken. If an engine component is involved, enter 0.

(26) (M) 11 (H-Z) Failed/Required Material Malfunction Code. If an engine component is involved, enter 000.

(27) (M) 14 (H-Z) Failed/Required Material Manufacturer's Code. Enter the manufacturer's code, if applicable. If an engine or engine component is involved, enter the TEC of the engine and the manufacturer's code of the component on the line below.

(28) (M) 19 (H-Z) Failed/Required Material Part Number. Enter the part number, if applicable. If an engine or engine component is involved, enter the serial number of the engine and the engine time prefixed by an E. On the line below, enter the part number of the engine component.

(29) (M) 41 (H-Z) Failed/Required Material Quantity. Enter the quantity, if applicable. If an engine component is involved, enter 0 for the engine and the quantity of components on the line below.

(30) (M) (H-Z) Failed/Required Material Project. Enter the project, if applicable. If an engine component is involved, enter the project on the same line as the component information.

(31) (M) 45 (H-Z) Failed/Required Material Date Ordered. Enter the Julian date the item was ordered, if applicable.

(32) (M) 49 (H-Z) Failed/Required Material Requisition Number. Enter the requisition number, if applicable. If an engine component is involved, enter the requisition number on the same line as the component information.

(33) (M) 53 (H-Z) Failed/Required Material Date Received. Enter the Julian date the part was received, if applicable.

(34) (M) Entries Required. Mark the appropriate block(s).

(35) (M) Discrepancy. Enter a description of the maintenance to be performed.

(36) (W) Corrective Action. Enter a description of the maintenance performed.

(37) (I) Up/Down. Circle the appropriate arrow.

(38) (M) Priority. Enter the priority.

(39) (M) System/Reason. Enter the system or reason.

h. Signatures: Sign as appropriate.

5.5.5.1.8 Corrosion Inspection. A corrosion inspection is an inspection primarily for the purpose of detecting corrosion and not part of another inspection. Corrosion inspections will be documented separately on a VIDS/MAF (see figure 5-5-14). Repair of corrosion/discrepancies discovered during a corrosion inspection will be documented on a separate VIDS/MAF (see figure 5-5-15).

a. Distribution: VIDS/MAF Copies 1 and 5 to work center, copy 2 to QA, copy 3 to Maintenance Control (VIDS board), and copy 4 to Maintenance Control (TDB).

b. Legend:

(1) (I) The initiator/originator of the maintenance action will fill in these block items at the time the need for maintenance is discovered.

No. SWP 4826 Copy 1 5 PART FORM WORK CENTER REGISTER, CONTROL AND PROCESSING COPY USE BALL-POINT PEN PRESS VIDS/MAF OPNAV 4790/60 (REV. 5-88) S/N 0107-LF-002-5900 HARD												ENTRIES REQUIRED SIGNATURE NONE <input checked="" type="checkbox"/> LOGS <input type="checkbox"/> REC <input type="checkbox"/> Mason			
LOCAL USE		ACCUMULATED WORK HOURS						ACCUMULATED AWM HOURS							
		NAME/SHIFT	TOOL BOX	DATE	MAN HOURS	ELAPSED M/T	DATE	TIME	REASON	HOURS					
		Gardner	15A-2	5180	1 0	1 0									
		Thomas		5180											
REFERENCE															
(H-Z) FAILED/REQUIRED MATERIAL															
79 INDEX	08 F/P	09 AWP	10 A/T	11 MAL	14 MFGR	19 PART NUMBER	34 REF SYMBOL	41 QTY	PROJ	43 PRI	45 DATE ORD	49 REQ NO	53 DATE REC		
	<input type="checkbox"/>	<input type="checkbox"/>													
	<input type="checkbox"/>	<input type="checkbox"/>													
	<input type="checkbox"/>	<input type="checkbox"/>													
	<input type="checkbox"/>	<input type="checkbox"/>													
	<input type="checkbox"/>	<input type="checkbox"/>													
	<input type="checkbox"/>	<input type="checkbox"/>													
	<input type="checkbox"/>	<input type="checkbox"/>													
A22 WORK UNIT CODE 040000B	A29 ACTION ORG A13	A32 TRANS 11	A34 MAINT/L 1	A35 ACT TAKEN 0	A36 MAL CODE 000	A39 ITEMS/P 1	A41 MAN HOURS 2 0	A45 ELAPSED M/T 1 0	F08 INTERIM <input type="checkbox"/>	TECHNICAL DIRECTIVE IDENTIFICATION					
A48 TYPE EQUIP MFBC	A52 BU/SER NUMBER 054321	A58 DISCO 0	A59 T/M D	A60 POSIT	A62 FID	A65 SAFETY/EI SER	A69 METER	SE MFGR	A74	INVENTORY F22 PERM LIMIT CODE F21		F28			
REPAIR CYCLE DATE TIME EOC				REMOVED/OLD ITEM E09 MFGR E13 SERIAL NUMBER				INSTALLED/NEW ITEM G08 MFGR G13 SERIAL NUMBER							
RECEIVED	B08 5180	B12 1300	B16												
IN WORK	B19 5180	B23 1330	B27	E23 PART NUMBER		E38 DATE REMOVED		G23 PART NUMBER							
COMPLETED	B30 5180	B34 1430		E42 TIME/CYCLES		E47 TIME/CYCLES		E52 TIME/CYCLES		G38 TIME/CYCLES	G43 TIME/CYCLES	G48 TIME/CYCLES			
AWAITING MAINTENANCE B38 B39 B43 B44 B48 B49 HOUR S HOUR S HOUR S				DISCREPANCY Perform 28 Day Corrosion Inspection.											
MAINTENANCE/SUPPLY RECORD JOB STATUS DATE TIME EOC				CORRECTIVE ACTION Inspection Completed.											
B53	B54	B58	B62												
B65	B66	B70	B74												
C08	C09	C13	C17												
C20	C21	C25	C29												
C32	C33	C37	C41												
C44	C45	C49	C53												
C56	C57	C61	C65												
D08	D09	D13	D17												
JOB CONTROL NUMBER A08 ORG A11 DAY A14 SER A17 SUP A19 WORK CENTER A13 180 011 15A				CORRECTED BY Gardner INSPECTED BY Clauseau SUPERVISOR Poirot MAINT CONTROL Hammer UP <input checked="" type="checkbox"/> MODEx PRI TURN-IN DOCUMENT SYSTEM/REASON MCN DOWN <input type="checkbox"/>											

Figure 5-5-14. Corrosion Inspection.

[illegible]

Figure 5-5-15. Repair of Discrepancy Discovered During Corrosion Inspection.

(2) (M) Maintenance Control will fill in these block items prior to commencement of maintenance.

(3) (W) The work center will fill in these block items during or after maintenance, as appropriate.

(4) (M) Material Control will fill in these block items on copy 1 of the VIDS/MAF and will notify Maintenance Control to annotate copy 3 on the VIDS board.

c. Entries:

(1) (M) A08 through A14 Job Control Number. Construct a JCN using the activity's organization code, the Julian date on which the target was inducted for inspection, and a numeric serial number.

(2) (M) A19 Work Center. Enter the work center performing the inspection.

(3) (M) A22 Work Unit Code. Enter 040000 and an alpha character in the seventh position to indicate the type of inspection concerned (i.e., 040000A for a 14 day inspection, and 040000B for a 28 day inspection). Work Unit Codes are found in the appropriate WUC manual.

(4) (W) A29 Organization Code. Enter the organization code of the organization performing the inspection.

(5) (W) A32 Transaction Code. Enter 11.

(6) (W) A34 Maintenance Level. Enter 1.

(7) (M) A35 Action Taken Code. Enter 0.

(8) (M) A36 Malfunction Code. Enter 000.

(9) (W) A39 Items Processed. Enter 1 upon completion of maintenance.

(10) (W) A41 Man Hours. Enter the total number of Man Hours required by work center personnel to perform the maintenance action.

(11) (W) A45 Elapsed Maintenance Time. Enter the EMT (clock time) expended for maintenance.

(12) (M) A48 Type Equipment Code. Enter the TEC of the target type.

(13) (M) A52 Bureau/Serial Number. Enter the serial number of the target.

(14) (M) A58 When Discovered Code. Enter 0.

(15) (M) A59 Type Maintenance Code. Enter D.

(16) (M) B08 and B12 Received. Enter the Julian date and time the inspection was received (due).

(17) (W) B19 and B23 In Work. Enter the Julian date and time the inspection was begun.

(18) (W) B30 and B34 Completed. Enter the Julian date and time the inspection was completed.

(19) (M) Entries Required. Mark the appropriate block(s).

(20) (M) Discrepancy. Enter a description of the inspection due.

(21) (W) Corrective Action. Upon completion of inspection, enter "Inspection Completed."

(22) (M) Up/Down. Circle the Down arrow.

(23) (M) Priority. Enter the priority.

(24) (M) System/Reason. Enter "Corrosion Inspection."

d. Signatures: Sign as appropriate.

e. Repair Of Discrepancy Discovered During Corrosion Inspection

(1) (M) A08 through A14 Job Control Number. Construct a JCN using the activity's organization code, the Julian date on which the target was inducted for maintenance, and a numeric serial number.

(2) (M) A19 Work Center. Enter the work center performing the maintenance.

(3) (M) A22 Work Unit Code. Enter the WUC of the item being repaired/replaced.

(4) (W) A29 Organization Code. Enter the organization code of the organization performing the maintenance action.

(5) (W) A32 Transaction Code. Enter the appropriate transaction code.

(6) (W) A34 Maintenance Level. Enter 1.

(7) (M) A35 Action Taken Code. Enter the appropriate action taken code.

(8) (M) A36 Malfunction Code. Enter the appropriate malfunction code.

(9) (W) A39 Items Processed. Enter the total number of items processed.

(10) (W) A41 Man Hours. Enter the total number of Man Hours required by the work center personnel to perform the maintenance action.

(11) (W) A45 Elapsed Maintenance Time. Enter the EMT (clock time) expended for maintenance.

(12) (M) A48 Type Equipment Code. Enter the TEC of the target type.

(13) (M) A52 Bureau/Serial Number. Enter the serial number of the target.

(14) (I) A58 When Discovered Code. Enter L.

(15) (M) A59 Type Maintenance Code. Enter D.

(16) (M) B08 and B12 Received. Enter the Julian date and time the maintenance action was reported.

(17) (W) B19 and B23 In Work. Enter the Julian date and time the work was begun.

(18) (W) B30 and B34 Completed. Enter the Julian date and time the maintenance action was completed.

(19) (W) E08 and G08 Manufacturer's Code. Enter the manufacturer's code of the component being removed/installed, if applicable.

(20) (W) E13 and G13 Serial Number. Enter the serial number of the component being removed/installed, if applicable.

(21) (W) E23 and G23 Part Number. Enter the part number of the component being removed/installed, if applicable.

(22) (W) E38 Date Removed. Enter the Julian date the component was removed, if applicable.

(23) (W) E42 and G38 Time/Cycles. Enter the time/cycle of the component, if applicable.

(24) (M) 79 (H-Z) Failed/Required Material Index. If an engine component is involved, enter H.

(25) (M) 10 (H-Z) Failed/Required Material Action Taken. If an engine component is involved, enter 0.

(26) (M) 11 (H-Z) Failed/Required Material Malfunction Code. If an engine component is involved, enter 000.

(27) (M) 14 (H-Z) Failed/Required Material Manufacturer's Code. Enter the manufacturer's code, if applicable. If an engine or engine component is involved, enter the TEC of the engine and the manufacturer's code of the component on the line below.

(28) (M) 19 (H-Z) Failed/Required Material Part Number. Enter the part number, if applicable. If an engine or engine component is involved, enter the serial number of the engine and the engine time prefixed by an E. On the line below, enter the part number of the engine component.

(29) (M) 41 (H-Z) Failed/Required Material Quantity. Enter the quantity, if applicable. If an engine component is involved, enter 0 for the engine and the quantity of components on the line below.

(30) (M) (H-Z) Failed/Required Material Project. Enter the project, if applicable. If an engine component is involved, enter the project on the same line as the component information.

(31) (M) 45 (H-Z) Failed/Required Material Date Ordered. Enter the Julian date the item was ordered, if applicable.

(32) (M) 49 (H-Z) Failed/Required Material Requisition Number. Enter the requisition number, if applicable. If an engine component is involved, enter the requisition number on the same line as the component information.

(33) (M) 53 (H-Z) Failed/Required Material Date Received. Enter the Julian date the part was received, if applicable.

(34) (M) Entries Required. Mark the appropriate block(s).

(35) (M) Discrepancy. Enter a description of the maintenance to be performed.

(36) (W) Corrective Action. Enter a description of the maintenance performed.

(37) (I) Up/Down. Circle the appropriate arrow.

(38) (M) Priority. Enter the priority.

(39) (M) System/Reason. Enter the system or reason.

f. Signatures. Sign as appropriate.

5.5.5.1.9 **Unscheduled Maintenance.** Unscheduled maintenance is maintenance, other than the fix phase of scheduled maintenance, occurring during the interval between scheduled downtime periods. Unscheduled maintenance actions will be documented on a VIDS/MAF (see figure 5-5-16).

a. Distribution: VIDS/MAF Copies 1 and 5 to work center, copy 2 to QA, copy 3 to Maintenance Control (VIDS board), and copy 4 to Maintenance Control (TDB).

b. Legend:

(1) (I) The initiator/originator of the maintenance action will fill in these block items at the time the need for maintenance is discovered.

(2) (M) Maintenance Control will fill in these block items prior to commencement of maintenance.

(3) (W) The work center will fill in these block items during or after maintenance, as appropriate.

(4) (M) Material Control will fill in these block items on copy 1 of the VIDS/MAF and will notify Maintenance Control to annotate copy 3 on the VIDS board.

c. Entries:

(1) (M) A08 through A14 Job Control Number. Construct a JCN using the activity's organization Code, the Julian date on which the target was inducted for maintenance, and a numeric serial number.

(2) (M) A19 Work Center. Enter the work center performing the maintenance.

(3) (M) A22 Work Unit Code. Enter the WUC of the item being repaired/replaced.

(4) (W) A29 Organization Code. Enter the organization code of the organization performing the maintenance action.

(5) (W) A32 Transaction Code. Enter the appropriate transaction code.

(6) (W) A34 Maintenance Level. Enter 1.

(7) (M) A35 Action Taken Code. Enter the appropriate action taken code.

(8) (M) A36 Malfunction Code. Enter the appropriate malfunction code.

(9) (W) A39 Items Processed. Enter the total number of items processed.

(10) (W) A41 Man Hours. Enter the total number of Man Hours required by work center personnel to perform the maintenance action.

(11) (W) A45 Elapsed Maintenance Time. Enter the EMT (clock time) expended for maintenance.

(12) (M) A48 Type Equipment Code. Enter the TEC of the target type.

(13) (M) A52 Bureau/Serial Number. Enter the serial number of the target.

(14) (M) A58 When Discovered Code. Enter the appropriate when discovered code.

(15) (M) A59 Type Maintenance Code. Enter B.

(16) (I) B08 and B12 Received Line. Enter the Julian date and time the discrepancy was reported.

(17) (W) B19 and B23 In Work Line. Enter the Julian date and time the work was begun.

(18) (W) B30 and B34 Completed Line. Enter the Julian date and time the maintenance action was completed.

(19) (W) E08 and G08 Manufacturer's Code. Enter the manufacturer's code of the component being removed/installed, if applicable.

(20) (W) E13 and G13 Serial Number. Enter the serial number of the component being removed/installed, if applicable.

(21) (W) E23 and G23 Part Number. Enter the part number of the component being removed/installed, if applicable.

(22) (W) E38 Date Removed. Enter the Julian date the component was removed, if applicable.

No. SWP 4826															
Copy 1 WORK CENTER REGISTER, CONTROL AND PROCESSING COPY VIDS/MAF OPNAV 4790/60 (REV. 5-88) S/N 0107-LF-002-5900															
ENTRIES REQUIRED SIGNATURE <div>NONE LOGS REC<div><input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></div>Nelson</div>															
		ACCUMULATED WORK HOURS				ACCUMULATED AWM HOURS									
LOCAL USE		NAME/SHIFT TOOL BOX DATE MAN HOURS ELAPSED M/T				DATE TIME REASON HOURS									
		Jones	15B-6	5240	1 0	1 0									
REFERENCE															
(H-Z) FAILED/REQUIRED MATERIAL															
79 INDEX	08 F/P	09 AWP	10 A/T	11 MAL	14 MFGR	19 PART NUMBER	34 REF SYMBOL	41 QTY PROJ	43 PRI	45 DATE ORD	49 REQ NO	53 DATE REC			
	<input type="checkbox"/>	<input type="checkbox"/>													
	<input type="checkbox"/>	<input type="checkbox"/>													
	<input type="checkbox"/>	<input type="checkbox"/>													
	<input type="checkbox"/>	<input type="checkbox"/>													
	<input type="checkbox"/>	<input type="checkbox"/>													
	<input type="checkbox"/>	<input type="checkbox"/>													
A22 WORK UNIT CODE	A29 ACTION ORG	A32 TRANS	A34 MAINT/L	A35 ACT TAKEN	A36 MAL CODE	A39 ITEMS/P	A41 MAN HOURS	A45 ELAPSED M/T	F08 INTERIM	TECHNICAL DIRECTIVE IDENTIFICATION			F19 KIT		
92A3110	A13	11	1	C	781	1	1 0	1 0	<input type="checkbox"/>	F09 CODE	P11 BASIC NO.	F15 RV	F16 AM	F17 PART	F19 KIT
A48 TYPE EQUIP		A52 BU/SER NUMBER	A58 DISCO	A59 T/M	A60 POSIT	A62 FID	A65 SAFETY/EI SER	A69 METER	SE MFGR	A74	INVENTORY F22 PERM LIMIT CODE		F28		
M6F8		420018	H	B							F21				
REPAIR CYCLE				REMOVED/OLD ITEM				INSTALLED/NEW ITEM							
DATE TIME EOC				E09 MFGR E13 SERIAL NUMBER				G08 MFGR G13 SERIAL NUMBER							
RECEIVED		B08	B12	B16											
		5240	1400												
IN WORK		B19	B23	B27	E23 PART NUM-BER	E38 DATE REMOVED		G23 PART NUMBER							
		5240	1430												
COMPLETED		B30	B34		E42 TIME/CYCLES	E47 TIME/CYCLES	E52 TIME/CYCLES	G38 TIME/CYCLES	G43 TIME/CYCLES	G48 TIME/CYCLES					
		5240	1530												
AWAITING MAINTENANCE				DISCREPANCY											
B38 B39 B43 B44 B48 B49				Right Front Tire Flat.											
HOUR S		HOUR S	HOUR S												
<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>												
MAINTENANCE/SUPPLY RECORD				CORRECTIVE ACTION											
JOB STATUS DATE TIME EOC				Fixed Right Front Tire.											
B53	B54	B58	B62												
B65	B66	B70	B74												
C08	C09	C13	C17												
C20	C21	C25	C29												
C32	C33	C37	C41												
C44	C45	C49	C53												
C56	C57	C61	C65												
D08	D09	D13	D17												
JOBSITE CONTROL NUMBER				TURN-IN DOCUMENT											
A08 ORG	A11 DAY	A14 SER	A17 SUP	SYSTEM/REASON											
A13	240	010	SUP	Tire											
A19 WORK CENTER				MCN											
15B															

Figure 5-5-16. Unscheduled Maintenance.

(23) (W) E42 and G38 Time/Cycles. Enter the time/cycle of the component, if applicable.

(24) (M) 79 (H-Z) Failed/Required Material Index. If an engine component is involved, enter H.

(25) (M) 10 (H-Z) Failed/Required Material Action Taken. If an engine component is involved, enter 0.

(26) (M) 11 (H-Z) Failed/Required Material Malfunction Code. If an engine component is involved, enter 000.

(27) (M) 14 (H-Z) Failed/Required Material Manufacturer's Code. Enter the manufacturer's code, if applicable. If an engine or engine component is involved, enter the TEC of the engine. On the line below, enter the manufacturer's code of the component.

(28) (M) 19 (H-Z) Failed/Required Material Part Number. Enter the part number, if applicable. If an engine or engine component is involved, enter the serial number of the engine and the engine time prefixed by an E. On the line below, enter the part number of the engine component.

(29) (M) 41 (H-Z) Failed/Required Material Quantity. Enter the quantity, if applicable. If an engine component is involved, enter 0 for the engine and the quantity of components on the line below.

(30) (M) (H-Z) Failed/Required Material Project. Enter the project, if applicable. If an engine component is involved, enter the project on the same line as the component information.

(31) (M) 45 (H-Z) Failed/Required Material Date Ordered. Enter the Julian date the item was ordered.

(32) (M) 49 (H-Z) Failed/Required Material Requisition Number. Enter the requisition number, if applicable. If an engine component is involved, enter the requisition number on the same line as the component information.

(33) (M) 53 (H-Z) Failed/Required Material Date Received. Enter the Julian date the part was received.

(34) (M) Entries Required. Mark None.

(35) (I) Discrepancy. Enter a description of the type of maintenance to be performed.

(36) (W) Corrective Action. Enter a description of the maintenance performed.

(37) (I) Up/Down. Circle the appropriate arrow.

(38) (M) Priority. Enter the priority.

(39) (M) System/Reason. Enter the system or reason.

d. Signatures. Sign as appropriate.

5.5.5.1.10 Excessive Troubleshooting. The time for troubleshooting will be documented separately when the time expended in locating a discrepancy is considered to be great enough to warrant separating the troubleshooting time from the repair time. Separating troubleshooting time requires completion of two VIDS/MAFs: one for the troubleshooting time (see figure 5-5-17) and one for the repair time (see figure 5-5-18). When recording the troubleshooting time separately from the repair time, the total time taken to isolate the primary cause of the discrepancy is recorded on a separate VIDS/MAF using the system, subsystem, or assembly, as appropriate.

a. Distribution: VIDS/MAF Copies 1 and 5 to work center, copy 2 to QA, copy 3 to Maintenance Control (VIDS board), and copy 4 to Maintenance Control (TDB).

b. Legend:

(1) (I) The initiator/originator of the maintenance action will fill in these block items at the time the need for maintenance is discovered.

(2) (M) Maintenance Control will fill in these block items prior to commencement of maintenance.

(3) (W) The work center will fill in these block items during or after maintenance, as appropriate.

(4) (m) Material Control will fill in these block items on copy 1 of the VIDS/MAF and will notify Maintenance Control to annotate copy 3 on the VIDS board.

c. Entries:

(1) (M) A08 through A14 Job Control Number. The JCN should be identical to the JCN on the repair document.

No. SWP 4826						Copy 1							5 PART FORM USE BALL-POINT PEN PRESS HARD							ENTRIES REQUIRED SIGNATURE <div>NONE LOGS REC</div> <div><input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Palmer</div>											
WORK CENTER REGISTER, CONTROL AND PROCESSING COPY																															
VIDS/MAF OPNAV 4790/60 (REV. 5-88) S/N 0107-LF-002-5900																															
LOCAL USE				ACCUMULATED WORK HOURS										ACCUMULATED AWM HOURS																	
				NAME/SHIFT		TOOL BOX		DATE		MAN HOURS		ELAPSED M/T		DATE		TIME		REASON		HOURS											
				Care		15A-1		5210		3' 0		3' 0																			
				McCord				5210		3' 0																					
REFERENCE																															
(H-Z) FAILED/REQUIRED MATERIAL																															
79 INDEX		08 F/P	09 AWP	10 A/T	11 MAL	14 MFGR	19 PART NUMBER		34 REF SYMBOL		41 QTY	PROJ	43 PRI	45 DATE ORD		49 REQ NO		53 DATE REC													
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																												
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																												
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																												
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																												
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																												
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																												
TECHNICAL DIRECTIVE IDENTIFICATION																															
A22 WORK UNIT CODE		A29 ACTION ORG		A32 TRANS		A34 MAINT/L		A35 ACT TAKEN		A36 MAL CODE		A39 ITEMS/P		A41 MAN HOURS		A45 ELAPSED M/T		F08 INTERIM		F09 CODE		P11 BASIC NO.		F15 RV		F16 AM		F17 PART		F19 KIT	
53A10		A13		11		1		Y		615		1		6' 0		3' 0		<input type="checkbox"/>													
A48 TYPE EQUIP		A52 BU/SER NUMBER		A58 DISCO		A59 T/M		A60 POSIT		A62 FID		A65 SAFETY/EI SER		A69 METER		SE MFGR		A74		INVENTORY F22 PERM LIMIT CODE		F28									
MGCC		321000		G		E														F21											
REPAIR CYCLE				REMOVED/OLD ITEM				INSTALLED/NEW ITEM																							
DATE TIME EOC				E09 MFGR E13 SERIAL NUMBER				G08 MFGR G13 SERIAL NUMBER																							
RECEIVED		B08	B12	B16																											
		5210	1300																												
IN WORK		B19	B23	B27	E23 PART NUM-BER				E38 DATE REMOVED				G23 PART NUMBER																		
		5210	1300																												
COMPLETED		B30	B34		E42 TIME/CYCLES		E47 TIME/CYCLES		E52 TIME/CYCLES		G38 TIME/CYCLES		G43 TIME/CYCLES		G48 TIME/CYCLES																
		5210	1600																												
AWAITING MAINTENANCE				DISCREPANCY																											
B38 B39 B43 B44 B48 B49				TM Drops Intermittently.																											
HOUR S																															
HOUR S																															
HOUR S																															
MAINTENANCE/SUPPLY RECORD				CORRECTIVE ACTION																											
JOB STATUS DATE TIME EOC				Found Shorted Pin in DKW29 Plug.																											
B53		B54		B58		B62																									
B65		B66		B70		B74																									
C08		C09		C13		C17																									
C20		C21		C25		C29																									
C32		C33		C37		C41																									
C44		C45		C49		C53																									
C56		C57		C61		C65																									
D08		D09		D13		D17																									
JOB CONTROL NUMBER				CORRECTED BY INSPECTED BY SUPERVISOR MAINT CONTROL																											
A08 A11 A14 A17				Carl Wendy Sanders Babs																											
ORG DAY SER SUP																															
A13 210 077																															
A19 WORK CENTER				UP DOWN MODEX PRI TURN-IN DOCUMENT SYSTEM/REASON MCN																											
15A				Telemetry																											

Figure 5-5-17. Excessive Troubleshooting.

(2) (M) A19 Work Center. Enter the work center performing the maintenance.

(3) (M) A22 Work Unit Code. Enter the WUC of the item being repaired/replaced.

(4) (W) A29 Organization Code. Enter the organization code of the organization performing the maintenance action.

(5) (W) A32 Transaction Code. Enter the appropriate transaction code.

(6) (W) A34 Maintenance Level. Enter 1.

(7) (M) A35 Action Taken Code. Enter Y.

(8) (M) A36 Malfunction Code. Enter the appropriate malfunction code.

(9) (W) A39 Items Processed. Enter the total number of items processed.

(10) (W) A41 Man Hours. Enter the total number of Man Hours required by work center personnel to perform the maintenance action.

(11) (W) A45 Elapsed Maintenance Time. Enter the EMT (clock time) expended for maintenance.

(12) (M) A48 Type Equipment Code. Enter the TEC of the target type.

(13) (M) A52 Bureau/Serial Number. Enter the serial number of the target.

(14) (I) A58 When Discovered Code. Enter the appropriate when discovered code.

(15) (W) A59 Type Maintenance Code. Enter the appropriate type maintenance code.

(16) (I) B08 and B12 Received. Enter the Julian date and time the maintenance action was reported.

(17) (W) B19 and B23 In Work. Enter the Julian date and time the work was begun.

(18) (W) B30 and B34 Completed. Enter the Julian date and time the maintenance action was completed.

(19) (M) Entries Required. Mark the appropriate block(s).

(20) (I) Discrepancy. Enter a description of the type of maintenance to be performed.

(21) (W) Corrective Action. Enter a description of the maintenance action performed upon completion of maintenance.

(22) (I) Up/Down. Circle the appropriate arrow.

(23) (M) Priority. Enter the priority.

(24) (M) System/Reason. Enter the system or reason.

d. Signatures: Sign as appropriate.

e. Repair After Excessive Troubleshooting

(1) (M) A08 through A14 Job Control Number. Construct a JCN using the activity's organization Code, the Julian date on which the target was inducted for maintenance, and a numeric serial number.

(2) (M) A19 Work Center. Enter the work center performing the maintenance.

(3) (M) A22 Work Unit Code. Enter the WUC of the item being repaired/replaced.

(4) (W) A29 Organization Code. Enter the organization code of the organization performing the maintenance action.

(5) (W) A32 Transaction Code. Enter the appropriate transaction code.

(6) (W) A34 Maintenance Level. Enter 1.

(7) (M) A35 Action Taken Code. Enter the appropriate action taken code.

(8) (M) A36 Malfunction Code. Enter the appropriate malfunction code.

(9) (W) A39 Items Processed. Enter the total number of items processed.

(10) (W) A41 Man Hours. Enter the total number of Man Hours required by the work center personnel to perform the maintenance action.

(11) (W) A45 Elapsed Maintenance Time. Enter the EMT (clock time) expended for maintenance.

(12) (M) A48 Type Equipment Code. Enter the TEC of the target type.

(13) (M) A52 Bureau/Serial Number. Enter the serial number of the target.

(14) (I) A58 When Discovered Code. Enter the appropriate when discovered code.

(15) (W) A59 Type Maintenance Code. Enter the appropriate type maintenance code.

(16) (I) B08 and B12 Received Line. Enter the Julian date and time reflected in blocks B30 and B34 of the troubleshooting document.

(17) (W) B19 and B23 In Work Line. Enter the Julian date and time the work was begun.

(18) (W) B30 and B34 Completed Line. Enter the Julian date and time the maintenance action was completed.

(19) (W) E08 and G08 Manufacturer's Code. Enter the manufacturer's code of the component being removed/installed, if applicable.

(20) (W) E13 and G13 Serial Number. Enter the serial number of the component being removed/installed, if applicable.

(21) (W) E23 and G23 Part Number. Enter the part number of the component being removed/installed, if applicable.

(22) (W) E38 Date Removed. Enter the Julian date the component was removed, if applicable.

(23) (W) E42 and G38 Time/Cycles. Enter the time/cycle of the component being removed/installed, if applicable.

(24) (M) 79 (H-Z) Failed/Required Material Index. If an engine component is involved, enter H.

(25) (M) 10 (H-Z) Failed/Required Material Action Taken. If an engine component is involved, enter 0.

(26) (M) 11 (H-Z) Failed/Required Material Malfunction Code. If an engine component is involved, enter 000.

(27) (M) 14 (H-Z) Failed/Required Material Manufacturer's Code. Enter the manufacturer's code, if applicable. If an engine or engine component is involved, enter

the TEC of the engine. On the line below, enter the manufacturer's code of the engine component.

(28) (M) 19 (H-Z) Failed/Required Material Part Number. Enter the part number, if applicable. If an engine or engine component is involved, enter the serial number of the engine and the engine time prefixed by an E. On the line below, enter the part number of the engine component.

(29) (M) 41 (H-Z) Failed/Required Material Quantity. Enter the quantity, if applicable. If an engine component is involved, enter 0 for the engine and the quantity of components on the line below.

(30) (M) (H-Z) Failed/Required Material Project. Enter the project. If an engine component is involved, enter the project on the same line as the component information.

(31) (M) 45 (H-Z) Failed/Required Material Date Ordered. Enter the Julian date the item was ordered.

(32) (M) 49 (H-Z) Failed/Required Material Requisition Number. Enter the requisition number. If an engine component is involved, enter the requisition number on the same line as the component information.

(33) (M) 53 (H-Z) Failed/Required Material Date Received. Enter the Julian date the part was received.

(34) (M) Entries Required. Mark the appropriate block(s).

(35) (M) Discrepancy. Enter a description of the maintenance to be performed.

(36) (W) Corrective Action. Enter a description of the maintenance performed.

(37) (I) Up/Down. Circle the appropriate arrow.

(38) (M) Priority. Enter the priority.

(39) (M) System/Reason. Enter the system or reason.

f. Signatures. Sign as appropriate.

5.5.5.1.11 Technical Directives. TDs direct the modification/one-time inspection of all NAVAIR (including field activities) procured equipment, in either the contractor's or Navy's possession, and provide for documentation of accomplishment (see figures 5-5-19 through 5-5-21).

No. SWP 4826 Copy 1 5 PART FORM WORK CENTER REGISTER, CONTROL AND PROCESSING COPY USE BALL-POINT PEN PRESS VIDS/MAF OPNAV 4790/60 (REV. 5-88) S/N 0107-LF-002-5900 HARD										ENTRIES REQUIRED SIGNATURE NONE LOGS REC <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> Josephson			
LOCAL USE		ACCUMULATED WORK HOURS						ACCUMULATED AWM HOURS					
		NAME/SHIFT	TOOL BOX	DATE	MAN HOURS	ELAPSED M/T	DATE	TIME	REASON	HOURS			
		Euclid	15A-1	5222	3 0	3 0							
REFERENCE													
(H-Z) FAILED/REQUIRED MATERIAL													
79 INDEX	08 F/P	09 AWP	10 A/T	11 MAL	14 MFGR	19 PART NUMBER	34 REF SYMBOL	41 QTY	43 PROJ	45 DATE ORD	49 REQ NO	53 DATE REC	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>											
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>											
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>											
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>											
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>											
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>											
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>											
TECHNICAL DIRECTIVE IDENTIFICATION													
A22 WORK UNIT CODE 1111310	A29 ACTION ORG A13	A32 TRANS 41	A34 MAINT/L 1	A35 ACT TAKEN C	A36 MAL CODE	A39 ITEMS/P 1	A41 MAN HOURS 3 0	A45 ELAPSED M/T 3 0	F08 INTERIM <input type="checkbox"/>	F09 CODE 50	P11 BASIC NO. 0015	F15 RV F16 AM F17 PART F19 KIT 00	
A48 TYPE EQUIP MDCA	A52 BU/SER NUMBER 758121	A58 DISCO	A59 T/M	A60 POSIT	A62 FID	A65 SAFETY/EI SER	A69 METER	SE MFGR	A74	INVENTORY F22 PERM LIMIT CODE F21		F28	
REPAIR CYCLE DATE TIME EOC				REMOVED/OLD ITEM E09 MFGR E13 SERIAL NUMBER				INSTALLED/NEW ITEM G08 MFGR G13 SERIAL NUMBER					
RECEIVED				B08 5221	B12 1100	B16							
IN WORK				B19 5222	B23 0800	B27	E23 PART NUMBER	E38 DATE REMOVED	G23 PART NUMBER				
COMPLETED				B30 5222	B34 1100		E42 TIME/CYCLES	E47 TIME/CYCLES	E52 TIME/CYCLES	G38 TIME/CYCLES	G43 TIME/CYCLES	G48 TIME/CYCLES	
AWAITING MAINTENANCE B38 B39 B43 B44 B48 B49 HOUR S HOUR S HOUR S				DISCREPANCY Incorporate AFC15. Electronic Equipment Shelf Modification Prior to Prelaunch Inspection.									
MAINTENANCE/SUPPLY RECORD JOB STATUS DATE TIME EOC				CORRECTIVE ACTION Electronic Equipment Shelf Incorporated. Complied with AFC15.									
B53	B54	B58	B62	PILOT/INITIATOR Watson CORRECTED BY Euclid INSPECTED BY Newton SUPERVISOR Shaw MAINT CONTROL Einstein UP <input type="checkbox"/> MODEx PRI TURN-IN DOCUMENT SYSTEM/REASON MCN DOWN <input checked="" type="checkbox"/>									
B65	B66	B70	B74										
C08	C09	C13	C17										
C20	C21	C25	C29										
C32	C33	C37	C41										
C44	C45	C49	C53										
C56	C57	C61	C65										
D08	D09	D13	D17										
JOB CONTROL NUMBER A08 ORG A11 DAY A14 SER A17 SUP A19 WORK CENTER A13 220 051 15A				CF REQ <input type="checkbox"/> QA REQ <input type="checkbox"/> AFC15									

Figure 5-5-19. Technical Directive for Airframe Change.

No. SWP 4826 Copy 1 5 PART FORM WORK CENTER REGISTER, CONTROL AND PROCESSING COPY USE BALL-POINT PEN PRESS VIDS/MAF OPNAV 4790/60 (REV. 5-88) S/N 0107-LF-002-5900 HARD										ENTRIES REQUIRED SIGNATURE NONE LOGS REC <input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> Flint					
LOCAL USE		ACCUMULATED WORK HOURS						ACCUMULATED AWM HOURS							
		NAME/SHIFT	TOOL BOX	DATE	MAN HOURS	ELAPSED M/T	DATE	TIME	REASON	HOURS					
		Bond	15A-1	5180	2: 0	2: 0									
		Chan		5180	2: 0										
		Bond	15A-3	5181	2: 0	2: 0									
		Chan		5181	2: 0										
REFERENCE															
(H-Z) FAILED/REQUIRED MATERIAL															
79 INDEX	08 F/P	09 AWP	10 A/T	11 MAL	14 MFGR	19 PART NUMBER	34 REF SYMBOL	41 QTY	PROJ	43 PRI	45 DATE ORD	49 REQ NO	53 DATE REC		
	<input type="checkbox"/>	<input type="checkbox"/>			JUDA1	123479 E0002		1		02	5180	H111	5181		
	<input type="checkbox"/>	<input type="checkbox"/>													
	<input type="checkbox"/>	<input type="checkbox"/>													
	<input type="checkbox"/>	<input type="checkbox"/>													
	<input type="checkbox"/>	<input type="checkbox"/>													
	<input type="checkbox"/>	<input type="checkbox"/>													
TECHNICAL DIRECTIVE IDENTIFICATION															
A22 WORK UNIT CODE 23V00	A29 ACTION ORG A13	A32 TRANS 23	A34 MAINT/L 1	A35 ACT TAKEN R	A36 MAL CODE 804	A39 ITEMS/P 1	A41 MAN HOURS 8: 0	A45 ELAPSED M/T 4: 0	F08 INTERIM <input type="checkbox"/>	F09 CODE	P11 BASIC NO.	F15 RV	F16 AM	F17 PART	F19 KIT
A48 TYPE EQUIP MFDA	A52 BU/SER NUMBER 847699	A58 DISCO 0	A59 T/M B	A60 POSIT	A62 FID	A65 SAFETY/EI SER	A69 METER	SE MFGR	A74	INVENTORY F22 PERM LIMIT CODE F21		F28			
REPAIR CYCLE DATE TIME EOC				REMOVED/OLD ITEM E09 MFGR E13 SERIAL NUMBER				INSTALLED/NEW ITEM G08 MFGR G13 SERIAL NUMBER							
RECEIVED				B08 5180	B12 1000	B16	JUDA1 123479		JUDA1 123479						
IN WORK				B19 5180	B23 1000	B27	E23 PART NUMBER E0002		E38 DATE REMOVED 5180		G23 PART NUMBER				
COMPLETED				B30 5181	B34 1400		E42 TIME/CYCLES E0002		E47 TIME/CYCLES		E52 TIME/CYCLES		G38 TIME/CYCLES E0002	G43 TIME/CYCLES	G48 TIME/CYCLES
AWAITING MAINTENANCE B38 B39 B43 B44 B48 B49 HOUR HOUR HOUR S S S				DISCREPANCY Remove Engine S/N: 123479 For Compliance With Paragraph 2.a. of PPC5.											
MAINTENANCE/SUPPLY RECORD JOB STATUS DATE TIME EOC				CORRECTIVE ACTION Reinstalled Engine After Modified Component Received and Installed on Engine.										PILOT/INITIATOR Poirot	
B53 B54 B58 B62															
B65 B66 B70 B74															
C08 C09 C13 C17															
C20 C21 C25 C29															
C32 C33 C37 C41															
C44 C45 C49 C53															
C56 C57 C61 C65															
D08 D09 D13 D17															
JOB CONTROL NUMBER A08 A11 A14 A17 ORG DAY SER SUP A13 180 003 15A				A19 WORK CENTER 15A				CORRECTED BY Bond		INSPECTED BY Kuryakin		SUPERVISOR Rockford		MAINT CONTROL McCloud	
UP <input type="checkbox"/>				MODEX		PRI		TURN-IN DOCUMENT		SYSTEM/REASON		MCN			
DOWN <input checked="" type="checkbox"/>															

Figure 5-5-20. Organizational Level Engine Removal for Technical Directive Compliance by IMA.

No. SWP 4826						Copy 1						5 PART FORM USE BALL-POINT PEN PRESS HARD						ENTRIES REQUIRED SIGNATURE NONE LOGS REC <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Flint													
WORK CENTER REGISTER, CONTROL AND PROCESSING COPY VIDS/MAF OPNAV 4790/60 (REV. 5-88) S/N 0107-LF-002-5900																															
LOCAL USE				ACCUMULATED WORK HOURS										ACCUMULATED AWM HOURS																	
				NAME/SHIFT		TOOL BOX		DATE		MAN HOURS		ELAPSED M/T		DATE		TIME		REASON		HOURS											
REFERENCE																															
(H-Z) FAILED/REQUIRED MATERIAL																															
79 INDEX		08 F/P		09 AWP		10 A/T		11 MAL		14 MFGR		19 PART NUMBER		34 REF SYMBOL		41 QTY		PROJ		43 PRI		45 DATE ORD		49 REQ NO		53 DATE REC					
A22 WORK UNIT CODE		A29 ACTION ORG		A32 TRANS		A34 MAINT/L		A35 ACT TAKEN		A36 MAL CODE		A39 ITEMS/P		A41 MAN HOURS		A45 ELAPSED M/T		F08 INTERIM		F09 CODE		P11 BASIC NO.		F15 RV		F16 AM		F17 PART		F19 KIT	
23V00		WAM		41		2		C				1		2 0		1 0		<input type="checkbox"/>		02		0005								00	
A48 TYPE EQUIP		A52 BU/SER NUMBER		A58 DISCO		A59 T/M		A60 POSIT		A62 FID		A65 SAFETY/EI SER		A69 METER		SE MFGR		A74		INVENTORY F22 PERM LIMIT CODE		F28									
JUDA1		123479																		F21											
REPAIR CYCLE				REMOVED/OLD ITEM				INSTALLED/NEW ITEM																							
DATE TIME EOC				E09 MFGR E13 SERIAL NUMBER				G08 MFGR G13 SERIAL NUMBER																							
RECEIVED		B08 5181		B12 B16																											
IN WORK		B19 5181		B23 B27		E23 PART NUM-BER				E38 DATE REMOVED				G23 PART NUMBER																	
COMPLETED		B30 5181		B34		E42 TIME/CYCLES				E47 TIME/CYCLES				E52 TIME/CYCLES				G38 TIME/CYCLES				G43 TIME/CYCLES				G48 TIME/CYCLES					
AWAITING MAINTENANCE								DISCREPANCY																							
B38 B39 B43 B44 B48 B49								Comply with Paragraph 2.a of PPC5.																							
HOUR S																															
MAINTENANCE/SUPPLY RECORD								PILOT/INITIATOR Solo																							
JOB STATUS DATE TIME EOC								CORRECTIVE ACTION																							
B53 B54 B58 B62								Complied with Paragraph 2.a of PPC5.																							
B65 B66 B70 B74																															
C08 C09 C13 C17																															
C20 C21 C25 C29																															
C32 C33 C37 C41																															
C44 C45 C49 C53																															
C56 C57 C61 C65																															
D08 D09 D13 D17																															
CORRECTED BY Smith								INSPECTED BY Brown				SUPERVISOR Beethoven				MAINT CONTROL Schubert															
UP <input type="checkbox"/>								MODEX				PRI				TURN-IN DOCUMENT				SYSTEM/REASON				MCN							
DOWN <input checked="" type="checkbox"/>																5180 H111															
JOB CONTROL NUMBER																															
A08 DAY A11 SER A14 SUP A17 WORK CENTER																															
A13 181 003 411																															

Figure 5-5-21. Technical Directive Compliance on an Engine (Turn-In Document).

a. Distribution: VIDS/MAF Copies 1 and 5 to work center, copy 2 to QA, copy 3 to Maintenance Control (VIDS board), and copy 4 to Maintenance Control (TDB). For TD compliance at IMA, all copies of the turn-in VIDS/MAF will go to the IMA. IMA assigns a work center and returns copy 2 to the organizational maintenance activity (OMA) after signing to show receipt of the component. Copy 2 is then posted on the VIDS board. IMA will complete the compliance portion of the technical directive by completing the turn in document.

b. Legend:

(1) (I) The initiator/originator will fill in these block items at the time the need for maintenance is discovered.

(2) (M) Maintenance Control will fill in these block items prior to commencement of maintenance.

(3) (W) The work center will fill in these block items during or after maintenance, as appropriate.

(4) (M) Material Control will fill in these block items on copy 1 of the VIDS/MAF and will notify Maintenance Control to annotate copy 3 on the VIDS board.

(5) (X) Production Control at the IMA will fill in these blocks prior to commencement of maintenance or after completion of maintenance, as appropriate.

(6) (Y) The work center at the IMA will fill in these blocks during or after maintenance, as appropriate.

c. Technical Directive For Airframe Change

(1) (M) A08 through A14 Job Control Number. Construct a JCN using the activity's organization Code, the Julian date on which the target was inducted for maintenance, and a numeric serial number.

(2) (M) A19 Work Center. Enter the work center performing the maintenance.

(3) (M) A22 Work Unit Code. Enter the WUC of the item being repaired/replaced.

(4) (W) A29 Organization Code. Enter the organization code of the organization performing the maintenance action.

(5) (W) A32 Transaction Code. Enter the appropriate transaction code.

(6) (W) A34 Maintenance Level. Enter 1.

(7) (M) A35 Action Taken Code. Enter the appropriate action taken code.

(8) (W) A39 Items Processed. Enter the total number of items processed.

(9) (W) A41 Man Hours. Enter the total number of Man Hours required by work center personnel to perform the maintenance action.

(10) (W) A45 Elapsed Maintenance Time. Enter the EMT (clock time) expended for maintenance.

(11) (M) A48 Type Equipment Code. Enter the TEC of the target type.

(12) (M) A52 Bureau/Serial Number. Enter the serial number of the target.

(13) (M) B08 and B12 Received Line. Enter the Julian date and time the TD was received.

(14) (W) B19 and B23 In Work Line. Enter the Julian date and time the work was begun.

(15) (W) B30 and B34 Completed Line. Enter the Julian date and time the TD was completed.

(16) (M) F08 Technical Directive Identification. Interim. Enter an "x" to indicate an interim type directive, otherwise leave blank.

(17) (M) F09 Technical Directive Code. Enter the appropriate TD code.

(18) (M) F11 Technical Directive Basic Number. Enter the TD number. Precede by zeroes if necessary to complete a 4-character field.

(19) (M) F15 Technical Directive Revision. Enter the appropriate alpha character for the TD revision, if applicable.

(20) (M) F16 Technical Directive Amendment. Enter the one character numeric amendment number, if applicable.

(21) (M) F17 Technical Directive Part Number. Enter the two-character numeric part number, if applicable.

(22) (M) F19 Technical Directive Kit. Enter the kit number. If no kit is required, enter 00.

(23) (M) 14 (H-Z) Failed/Required Material Manufacturer's Code. Enter the manufacturer's code of the item.

(24) (M) 19 (H-Z) Failed/Required Material Part Number. Enter the part number of the item.

(25) (M) 41 (H-Z) Failed/Required Material Quantity. Enter the quantity.

(26) (M) 43 (H-Z) Failed/Required Material Priority. Enter the appropriate priority code.

(27) (M) 45 (H-Z) Failed/Required Material Date Ordered. Enter the Julian date the item was ordered.

(28) (M) 49 (H-Z) Failed/Required Material Requisition Number. Enter the requisition number.

(29) (M) 53 (H-Z) Failed/Required Material Date Received. Enter the Julian date the item was received.

(30) (M) Entries Required. Mark the Logs block.

(31) (M) Discrepancy. Enter a description of the TD subject.

(32) (W) Corrective Action. Enter a description of the maintenance action performed.

(33) (M) Priority. Enter the priority.

(34) (M) System/Reason. Enter the system or reason which is the subject of the TD.

d. Signatures. Sign as appropriate.

e. Organizational Level Engine Removal For Technical Directive Compliance By IMA

(1) (M) A08 through A14 Job Control Number. Construct a JCN using the activity's organization Code, the Julian date on which the target was inducted for TD compliance, and a numeric serial number.

(2) (M) A19 Work Center. Enter the work center performing the maintenance.

(3) (M) A22 Work Unit Code. Enter the WUC of the item.

(4) (M) A29 Organization Code. Enter the organization code of the organization performing the maintenance action.

(5) (M) A32 Transaction Code. Upon completion of maintenance, enter 23. If an engine component is removed, enter 25.

(6) (W) A34 Maintenance Level. Upon completion of maintenance, enter 1.

(7) (W) A35 Action Taken Code. Upon completion of maintenance, enter R. If an engine component is removed, enter S.

(8) (W) A36 Malfunction Code. Upon completion of maintenance, enter 804. If an engine component is removed, enter 800.

(9) (W) A39 Items Processed. Enter the number of items processed.

(10) (W) A41 Man Hours. Upon completion of maintenance, enter the total number of Man Hours required by the work center personnel to perform the removal.

(11) (W) A45 Elapsed Maintenance Time. Upon completion, enter the EMT (clock time) expended for maintenance.

(12) (M) A48 Type Equipment Code. Enter the TEC of the target type.

(13) (M) A52 Bureau/Serial Number. Enter the serial number of the target.

(14) (M) A58 When Discovered Code. Enter 0.

(15) (M) A59 Type Maintenance Code. Enter B.

(16) (M) B08 and B12 Received Line. Enter the Julian date and time the TD was received.

(17) (W) B19 and B23 In Work Line. Enter the Julian date and time the work was begun.

(18) (W) B30 and B34 Completed Line. Enter the Julian date and time the maintenance action was completed.

(19) (W) E08 and G08 Manufacturer's Code. Enter the TEC of the engine. If an engine component is removed, enter the manufacturer's code of the component.

(20) (W) E13 and G13 Serial Number. Enter the serial number of the engine. If an engine component is removed, enter the serial number of the component.

(21) (W) E23 and G23 Part Number. If an engine component is removed/installed, enter the part number; otherwise, leave blank.

(22) (W) E38 Date Removed. Enter the Julian date the engine/component was removed.

(23) (W) E42 and G38 Time/Cycles. Enter the time/cycle of the engine/component which was removed.

(24) (M) 79 (H-Z) Failed/Required Material Index. If an engine component is removed, enter H.

(25) (M) 10 (H-Z) Failed/Required Material Action Taken. If an engine component is removed, enter S.

(26) (M) 11 (H-Z) Failed/Required Material Malfunction Code. Enter 000 if an engine component is removed.

(27) (M) 14 (H-Z) Failed/Required Material Manufacturer's Code. Enter the TEC of the engine followed by the numeric digit indicating the engine position. On the line below, enter the manufacturer's code of the component, if applicable.

(28) (M) 19 (H-Z) Failed/Required Material Part Number. Enter the engine serial number and the engine time (prefixed with an E). On the line below, enter the part number of the component, if applicable.

(29) (M) 41 (H-Z) Failed/Required Material Quantity. Enter 1. If an engine component is involved, enter 0, and on line below enter the number of components involved.

(30) (M) 43 (H-Z) Failed/Required Material Priority. Enter the priority. If a component is involved, enter the priority on the same line as the component information.

(31) (M) 45 (H-Z) Failed/Required Material Date Ordered. Enter the Julian date the engine was removed. If a component is involved, enter the Julian date the component was ordered.

(32) (M) 49 (H-Z) Failed/Required Material Requisition Number. Enter the requisition number.

(33) (M) 53 (H-Z) Failed/Required Material Date Received. Enter the Julian date the engine/component was received.

(34) (M) Entries Required. Mark the Logs and Rec blocks.

(35) (M) Discrepancy. Enter a description of the type of maintenance to be performed.

(36) (W) Corrective Action. Upon completion, enter a description of the maintenance action performed.

f. Signatures. Sign as appropriate.

g. Technical Directive Compliance On An Engine (turn in Document)

(1) (M) A08 through A14 Job Control Number. Enter the same JCN which appears on the VIDS/MAF documenting the removal.

(2) (X) A19 Work Center. Enter the work center performing the compliance.

(3) (M) A22 Work Unit Code. Enter the WUC of the system, subassembly, or assembly being repaired/modified/replaced.

(4) (X) A29 Organization Code. Enter the organization code of the organization performing the compliance.

(5) (Y) A32 Transaction Code. Enter the appropriate transaction code.

(6) (Y) A34 Maintenance Level. Enter 2.

(7) (Y) A35 Action Taken Code. Enter the appropriate action taken code.

(8) (Y) A39 Items Processed. Enter the number of items processed.

(9) (Y) A41 Man Hours. Enter the total number of Man Hours required by work center personnel to perform the compliance.

(10) (Y) A45 Elapsed Maintenance Time. Enter the EMT (clock time) expended for compliance.

(11) (M) A48 Type Equipment Code. Enter the TEC of the engine.

(12) (M) A52 Bureau/Serial Number. Enter the serial number of the engine.

(13) (X) B08 Received Line. Enter the Julian date the item was received.

(14) (Y) B19 and B30 In Work and Completed Date. Enter the Julian date the compliance began and the Julian date the compliance was completed.

(15) (M) E08 Manufacturer's Code. Enter the manufacturer's code of the component, if applicable.

(16) (M) E13 Serial Number. Enter the serial number of the engine component, if applicable.

(17) (M) E23 Part Number. Enter the part number of the engine component, if applicable.

(18) (M) E38 Date Removed. Enter the date the engine component was removed, if applicable.

(19) (M) E42 Time/Cycles. Enter the total operating time/cycle of the engine/component, if applicable.

(20) (M) F08 Interim. Enter an "x" to indicate interim type directive; otherwise leave blank.

(21) (M) F09 Technical Directive Code. Enter the appropriate two-character code that denotes the type of directive being incorporated.

(22) (M) F11 Technical Directive Basic Number. Enter the technical directive number. Precede by zeroes if necessary to fill four spaces.

(23) (M) F15 Technical Directive Revision. Enter the one alphabetic character that denotes the specific revision, if applicable.

(24) (M) F17 Technical Directive part Number. Enter the two character numeric number of the basic TD. Leave blank if not applicable.

(25) (M) F19 Kit. Enter the two character code of the specific kit incorporated. If no kit is required, enter 00.

(26) (X) Entries Required. Mark the Logs and Rec blocks.

(27) (M) Discrepancy. Enter a description of the type of maintenance to be performed.

(28) (Y) Corrective Action. Upon completion of the compliance, enter a description of the action performed.

(29) (M) turn in Document. Enter the Julian date (block 45) and requisition number (block 49) from the original VIDS/MAF.

h. Signatures. Sign as appropriate.

5.5.5.1.12 Work Request. A VIDS/MAF work request is used by maintenance and supply activities to request work or assistance from an IMA when such work is beyond the requesting activity's capability and does not involve repair of aeronautical material (see figures 5-5-22 and 5-5-23). Upon completion of check, test, or service action, the work center will notify Production Control of job completion and turn in

copy 1 for further processing to the data services facility. Copy 4 will be attached to the component/item(s) and routed to Production Control, who will notify the originating activity that the component/item(s) is ready for pickup. Production Control will issue the component/item(s) with copy 4 attached, to the originating activity and receive copy 2 from the originating activity as proof of delivery. Production Control may destroy copy 2 of the VIDS/MAF work request at this time.

a. Distribution: All copies to IMA. IMA returns copy 2 to OMA after assigning work center. Copy 2 is posted on the VIDS board of the OMA Work Center.

b. Legend:

(1) (M) Maintenance Control will fill in these block items prior to commencement of maintenance.

(2) (W) The work center will fill in these block items during or after maintenance, as appropriate.

c. Entries: Reinstallation After Check, Test, and Service

(1) (M) A08 through A14 Job Control Number. Construct a JCN using the activity's organization Code, the Julian date on which the target was inducted for maintenance, and a numeric serial number.

(2) (M) A19 Work Center. Enter the work center performing the maintenance.

(3) (M) A22 Work Unit Code. Enter the WUC of the item being repaired/replaced.

(4) (M) A29 Organization Code. Enter the organization code of the organization performing the maintenance action.

(5) (M) A32 Transaction Code. Enter 11 upon completion of maintenance.

(6) (M) A34 Maintenance Level. Enter 1 upon completion of maintenance.

(7) (W) A35 Action Taken Code. Upon completion of maintenance, enter S.

(8) (W) A36 Malfunction Code. Upon completion of maintenance, enter the appropriate malfunction code.

(9) (W) A39 Items Processed. Enter the total number of items processed.

No. SWP 4826						Copy 1				5 PART FORM USE BALL-POINT PEN PRESS HARD				ENTRIES REQUIRED SIGNATURE NONE LOGS REC <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Handell					
WORK CENTER REGISTER, CONTROL AND PROCESSING COPY VIDS/MAF OPN/A/ 4790/60 (REV. 5-88) S/N 0107-LF-002-5900																			
LOCAL USE				ACCUMULATED WORK HOURS						ACCUMULATED AWM HOURS									
				NAME/SHIFT		TOOL BOX	DATE	MAN HOURS		ELAPSED M/T		DATE		TIME	REASON		HOURS		
				Bach		15A-2	5330	1' 0		1' 0									
				Bach		15A-2	5330	1' 0		1' 0									
REFERENCE																			
(H-Z) FAILED/REQUIRED MATERIAL																			
79 INDEX	08 F/P	09 AWP	10 A/T	11 MAL	14 MFGR	19 PART NUMBER	34 REF SYMBOL	41 QTY	PROJ	43 PRI	45 DATE ORD	49 REQ NO	53 DATE REC						
	<input type="checkbox"/>	<input type="checkbox"/>																	
	<input type="checkbox"/>	<input type="checkbox"/>																	
	<input type="checkbox"/>	<input type="checkbox"/>																	
	<input type="checkbox"/>	<input type="checkbox"/>																	
	<input type="checkbox"/>	<input type="checkbox"/>																	
	<input type="checkbox"/>	<input type="checkbox"/>																	
	<input type="checkbox"/>	<input type="checkbox"/>																	
A22 WORK UNIT CODE	A29 ACTION ORG	A32 TRANS	A34 MAINT/L	A35 ACT TAKEN	A36 MAL CODE	A39 ITEMS/P	A41 MAN HOURS	A45 ELAPSED M/T	F08 INTERIM	TECHNICAL DIRECTIVE IDENTIFICATION									
93845	WAW	11	1	S	804	1	2 0	2 0	<input type="checkbox"/>	F09 CODE	P11 BASIC NO.	F15 RV	F16 AM	F17 PART	F19 KIT				
A48 TYPE EQUIP	A52 BU/SER NUMBER	A58 DISCO	A59 T/M	A60 POSIT	A62 FID	A65 SAFETY/EI SER	A69 METER	SE MFGR	A74	INVENTORY F22 PERM LIMIT CODE		F28							
MFDA	321008	G	E								F21								
REPAIR CYCLE				REMOVED/OLD ITEM				INSTALLED/NEW ITEM											
DATE TIME EOC				E09 MFGR E13 SERIAL NUMBER				G08 MFGR G13 SERIAL NUMBER											
RECEIVED	B08 5330	B12 0930	B16																
IN WORK	B19 5330	B23 1300	B27	E23 PART NUM-BER				E38 DATE REMOVED		G23 PART NUMBER									
COMPLETED	B30 5331	B34 1000		E42 TIME/CYCLES		E47 TIME/CYCLES		E52 TIME/CYCLES		G38 TIME/CYCLES		G43 TIME/CYCLES		G48 TIME/CYCLES					
AWAITING MAINTENANCE				DISCREPANCY															
B38	B39	B43	B44	B48	B49	Remove drogue chute for check and test, and reinstall.													
HOUR	HOUR	HOUR																	
S	S	S																	
MAINTENANCE/SUPPLY RECORD				CORRECTIVE ACTION															
JOB STATUS DATE TIME EOC				Removed and reinstalled drogue chute after check and test.															
B53	B54	B58	B62																
B65	B66	B70	B74																
C08	C09	C13	C17																
C20	C21	C25	C29																
C32	C33	C37	C41																
C44	C45	C49	C53																
C56	C57	C61	C65																
D08	D09	D13	D17																
JOB CONTROL NUMBER				CORRECTED BY															
A08 ORG	A11 DAY	A14 SER	A17 SUP	Bach				INSPECTED BY Charikosky				SUPERVISOR Stravinsky				MAINT CONTROL Strauss			
WAW	330	012		UP <input type="checkbox"/>				DOWN <input type="checkbox"/>				MODEX				PRI			
A19 WORK CENTER				TURN-IN DOCUMENT				SYSTEM/REASON				MCN							
15A																			

Figure 5-5-22. Reinstallation After Check, Test, and Service.

No. SWP 4826						Copy 1						5 PART FORM USE BALL-POINT PEN PRESS HARD						ENTRIES REQUIRED SIGNATURE NONE LOGS REC <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Brahms													
WORK CENTER REGISTER, CONTROL AND PROCESSING COPY VIDS/MAF OPNAV 4790/60 (REV. 5-88) S/N 0107-LF-002-5900																															
LOCAL USE				ACCUMULATED WORK HOURS												ACCUMULATED AWM HOURS															
				NAME/SHIFT		TOOL BOX		DATE		MAN HOURS		ELAPSED M/T		DATE		TIME		REASON		HOURS											
REFERENCE																															
(H-Z) FAILED/REQUIRED MATERIAL																															
79 INDEX		08 F/P		09 AWP		10 A/T		11 MAL		14 MFGR		19 PART NUMBER		34 REF SYMBOL		41 QTY		PROJ		43 PRI		45 DATE ORD		49 REQ NO		53 DATE REC					
A22 WORK UNIT CODE 93845		A29 ACTION ORG WAM		A32 TRANS		A34 MAINT/L		A35 ACT TAKEN		A36 MAL CODE		A39 ITEMS/P		A41 MAN HOURS		A45 ELAPSED M/T		F08 INTERIM		F09 CODE		P11 BASIC NO.		F15 RV		F16 AM		F17 PART		F19 KIT	
A48 TYPE EQUIP MFDA		A52 BU/SER NUMBER 321008		A58 DISCO G		A59 T/M E		A60 POSIT		A62 FID		A65 SAFETY/EI SER		A69 METER		SE MFGR		A74		INVENTORY F22 PERM LIMIT CODE		F21						F28			
REPAIR CYCLE DATE TIME EOC				REMOVED/OLD ITEM E09 MFGR E13 SERIAL NUMBER								INSTALLED/NEW ITEM G08 MFGR G13 SERIAL NUMBER																			
RECEIVED		B08 5330		B12		B16																									
IN WORK		B19 5330		B23		B27		E23 PART NUM-BER				E38 DATE REMOVED				G23 PART NUMBER															
COMPLETED		B30 5331		B34				E42 TIME/CYCLES		E47 TIME/CYCLES		E52 TIME/CYCLES		G38 TIME/CYCLES		G43 TIME/CYCLES		G48 TIME/CYCLES													
AWAITING MAINTENANCE B38 B39 B43 B44 B48 B49								DISCREPANCY Check, Test, and Service Drogue Chute.																							
HOUR S		HOUR S		HOUR S																											
MAINTENANCE/SUPPLY RECORD JOB STATUS DATE TIME EOC								PILOT/INITIATOR Donalds																							
CORRECTIVE ACTION																															
B53		B54		B58		B62																									
B65		B66		B70		B74																									
C08		C09		C13		C17																									
C20		C21		C25		C29																									
C32		C33		C37		C41																									
C44		C45		C49		C53																									
C56		C57		C61		C65																									
D08		D09		D13		D17																									
JOB CONTROL NUMBER A08 DAY A14 SER A17 SUP WAW 330 012								A19 WORK CENTER 810		CORRECTED BY Schubert				INSPECTED BY Mendelson				SUPERVISOR Schumann				MAINT CONTROL Stravinsky									
UP				MODEX		PRI		TURN-IN DOCUMENT				SYSTEM/REASON				MCN															
DOWN																															

Figure 5-5-23. Work Request (Turn-In Document).

(10) (W) A41 Man Hours. Enter the total number of Man Hours required by the work center personnel to perform the removal and installation.

(11) (W) A45 Elapsed Maintenance Time. Enter the EMT (clock time) expended for the removal and reinstallation.

(12) (M) A48 Type Equipment Code. Enter the TEC of the target type.

(13) (M) A52 Bureau/Serial Number. Enter the serial number of the target.

(14) (M) A58 When Discovered Code. Enter the appropriate when discovered code.

(15) (M) A59 Type maintenance. Enter the appropriate type maintenance code.

(16) (M) B08 and B12 Received Line. Enter the Julian date the time the maintenance action reported. was

(17) (W) B19 and B23 In Work Line. Enter the Julian date and time work was begun.

(18) (W) E08 Manufacturer's Code. Enter the manufacturer's code, if item is removed.

(19) (W) E13 Serial Number. If item is removed, enter the serial number of item.

(20) (W) E23 Part Number. If item is removed, enter the part number of item.

(21) (M) E38 Date Removed. If item is removed, enter the Julian date the item was removed.

(22) (M) Entries Required. Mark the None block.

(23) (M) Discrepancy. Enter a description of the maintenance required of the IMA.

(24) (W) Corrective Action. Upon completion of maintenance, enter a description of corrective action.

(25) (M) System/Reason. Enter the system or reason.

d. Signatures. Sign as appropriate.

e. Work Request (Turn-In Document)

(1) (M) A08 through A14 - Job Control Number. Use the same JCN as on the control document. In cases where the target is undergoing inspection, enter the sequential (fix) JCN assigned to control the removal/installation.

(2) (M) A22 Work Unit Code. Enter the WUC of the item.

(3) (M) A48 Type Equipment Code. Enter the TEC of the target type.

(4) (M) A52 Bureau/Serial Number. Enter the serial number of the target.

(5) (M) A58 When Discovered Code. Enter the appropriate when discovered code.

(6) (M) A59 Type Maintenance Code. Enter the appropriate type maintenance code.

(7) (M) E08 Manufacturer's Code. Enter the manufacturer's code of the removed item, if applicable.

(8) (M) E13 Serial Number. Enter the serial number of removed item, if applicable. If there is more than one serial number, enter "MULTI."

(9) (M) E23 Part Number. Enter the part number of removed item, if applicable.

(10) (M) E38 Date Removed. Enter the Julian date the part was removed, if applicable.

(11) (M) E42 Time/Cycles. Enter the total operating time/cycle, if applicable.

(12) (M) Discrepancy. Enter a description of the maintenance to be performed and item serial numbers, if applicable.

(13) (M) turn in Document. Transcribe data from blocks 45 and 49 of original VIDS/MAF.

f. Signatures. Sign as appropriate.

5.5.5.1.13 Post-launch Rehabilitation Inspection (Calendar Depth). This inspection is conducted to determine any degradation or damage that may have occurred during a mission and to perform necessary rehabilitation, including testing and servicing, to return the target to an operational status (see figures 5-5-24 through 5-5-26). Removal of a component for storage for future reconfiguration is documented on a VIDS/MAF for each component that is removed. Rehabilitation after each recovery includes disassembly, decontamination, corrosion control, visual inspection, repair of operational and retrieval damage, correction of discrepancies, bench testing of components, reassembly of the target, and complete system testing. This process equals, or exceeds, the depth of an aircraft calendar inspection. Following launch and recovery of a target, the major rehabilitation effort is documented in a manner similar to an aircraft calendar inspection. VIDS/MAF documentation is thus linked by the JCN. This applies to both look and fix phase actions. The JCN sequence serial number for the original and all associated look and fix phase VIDS/MAFs have an alphabetic first character; the last two characters are 00 for look phase, and numbers 01 through 99 are used for fix phase documents. If there is more than one inspection on the same day, the first serial number would be A00, the second would be B00, etc. A control VIDS/MAF is issued by Maintenance Control to the inspection crew (or controlling work center) supervisor. A separate VIDS/MAF is then initiated by the supervisor and issued to other participating work centers for documenting look phase Man Hours. Look phase documents carry a JCN sequence number identical to that used on the original control document. When one work center is responsible for an entire inspection, Man Hours and EMT can be collected on the inspection control document (see figure 5-5-24). Fix phase actions are documented using a JCN corresponding to that of the look phase, i.e., A01, A02, etc., and a when discovered code of M. Discrepancies found during the inspection that require a repair or replacement action require a separate VIDS/MAF, including fix in place repair actions (see figure 5-5-25).

a. Distribution: VIDS/MAF Copies 1 and 5 to work center, copy 2 to QA, copy 3 to Maintenance Control (VIDS board), and copy 4 to Maintenance Control (TDB). For the work request, all copies go to IMA. IMA returns copy 2 to the OMA after assigning a work center. Copy 2 is then placed on the VIDS board of the OMA Work Center.

b. Legend:

(1) (I) The initiator/originator will fill in these block items at the time the need for maintenance is discovered.

(2) (M) Maintenance Control will fill in these block items prior to commencement of maintenance.

(3) (W) The work center will fill in these block items during or after maintenance, as appropriate.

(4) (M) Material Control will fill in these block items on copy 1 of the VIDS/MAF and will notify Maintenance Control to annotate copy 3 on the VIDS board.

(5) (X) Production Control at the IMA will fill in these blocks prior to commencement of maintenance or after completion of maintenance, as appropriate.

(6) (Y) The work center at the IMA will fill in these blocks during or after maintenance, as appropriate.

c. Post-launch Rehabilitation (Look Phase)

(1) (M) A08 through A14 Job Control Number. Construct a JCN using the activity's organization Code, the Julian date on which the target was inducted for inspection, and a alphanumeric serial number, i.e., A00, B00, etc.

(2) (M) A19 Work Center. Enter the work center performing the look phase of the inspection.

(3) (M) A22 Work Unit Code. Enter an alphanumeric code, i.e., 03A0000, 03B0000; etc., where A denotes the target's first post-launch rehabilitation inspection, B denotes the second, etc.

(4) (W) A29 Organization Code. Enter the organization code of the organization performing the inspection.

(5) (W) A32 Transaction Code. Enter 11 for targets, 12 for engines.

(6) (W) A34 Maintenance Level. Enter 1.

(7) (M) A35 Action Taken Code. Enter 0.

(8) (M) A36 Malfunction Code. Enter 000.

(9) (M) A39 Items Processed. Upon completion of the inspection, enter 1.

(10) (W) A41 Man Hours. Enter the total number of Man Hours required by work center personnel to perform the inspection.

(11) (W) A45 Elapsed Maintenance Time. Enter the EMT (clock time) expended by work center personnel for the inspection.

No. SWP 4826 Copy 1 5 PART FORM WORK CENTER REGISTER, CONTROL AND PROCESSING COPY USE BALL-POINT PEN PRESS VIDS/MAF OPNAV 4790/60 (REV. 5-88) S/N 0107-LF-002-5900 HARD										ENTRIES REQUIRED SIGNATURE NONE LOGS REC <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> Rockford			
LOCAL USE		ACCUMULATED WORK HOURS						ACCUMULATED AWM HOURS					
		NAME/SHIFT	TOOL BOX	DATE	MAN HOURS	ELAPSED M/T	DATE	TIME	REASON	HOURS			
		Colombo	15A-2	5117	2 0	2 0							
REFERENCE													
(H-Z) FAILED/REQUIRED MATERIAL													
79 INDEX	08 F/P	09 AWP	10 A/T	11 MAL	14 MFGR	19 PART NUMBER	34 REF SYMBOL	41 QTY	43 PROJ	45 DATE ORD	49 REQ NO	53 DATE REC	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>											
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>											
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>											
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>											
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>											
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>											
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>											
A22 WORK UNIT CODE 03A0000	A29 ACTION ORG WAW	A32 TRANS 11	A34 MAINT/L 1	A35 ACT TAKEN 0	A36 MAL CODE 000	A39 ITEMS/P 0	A41 MAN HOURS 2 0	A45 ELAPSED M/T 2 0	F08 INTERIM <input type="checkbox"/>	TECHNICAL DIRECTIVE IDENTIFICATION			
A48 TYPE EQUIP MFDA		A52 BU/SER NUMBER 987652	A58 DISCO 0	A59 T/M P	A60 POSIT	A62 FID	A65 SAFETY/ EI SER	A69 METER	SE MFGR	A74	INVENTORY F22 PERM LIMIT CODE F21	F28	
REPAIR CYCLE DATE TIME EOC				REMOVED/OLD ITEM E09 MFGR E13 SERIAL NUMBER				INSTALLED/NEW ITEM G08 MFGR G13 SERIAL NUMBER					
RECEIVED		B08 5117	B12 0800	B16									
IN WORK		B19 5117	B23 0800	B27	E23 PART NUM- BER		E38 DATE REMOVED		G23 PART NUMBER				
COMPLETED		B30 5117	B34 1030		E42 TIME/ CYCLES		E47 TIME/ CYCLES		E52 TIME/ CYCLES		G38 TIME/ CYCLES	G43 TIME/ CYCLES	G48 TIME/ CYCLES
AWAITING MAINTENANCE B38 B39 B43 B44 B48 B49 HOUR HOUR HOUR S S S				DISCREPANCY Perform Postlaunch Rehabilitation Inspection.									
MAINTENANCE/SUPPLY RECORD JOB STATUS DATE TIME EOC				CORRECTIVE ACTION Inspection Completed.									
B53	B54	B58	B62										
B65	B66	B70	B74										
C08	C09	C13	C17										
C20	C21	C25	C29										
C32	C33	C37	C41										
C44	C45	C49	C53										
C56	C57	C61	C65										
D08	D09	D13	D17										
JOB CONTROL NUMBER A08 A11 A14 A17 ORG DAY SER SUP WAW 117 A00				A19 WORK CENTER 15A		CORRECTED BY Colombo		INSPECTED BY Mannix		SUPERVISOR McCloud		MAINT CONTROL McMillan	
UP <input type="checkbox"/>				MODEX		PRI		TURN-IN DOCUMENT		SYSTEM/REASON		MCN	
DOWN <input checked="" type="checkbox"/>										Postlaunch			

Figure 5-5-24. Post-launch Rehabilitation (Look Phase).

[illegible]

Figure 5-5-25. Post-launch Rehabilitation (Fix Phase).

(12) (M) A48 Type Equipment Code. Enter the TEC of the target type.

(13) (M) A52 Bureau/Serial Number. Enter the serial number of the target.

(14) (M) A58 When Discovered Code. Enter 0.

(15) (M) A59 Type Maintenance Code. Enter P.

(16) (M) B08 and B12 Received. Enter the Julian date and time the inspection was received (due).

(17) (W) B19 and B23 In Work. Enter the Julian date and time the inspection was begun.

(18) (W) B30 and B34 Completed. Enter the Julian date and time the inspection was completed.

(19) (M) Entries Required. Mark the Logs block.

(20) (M) Discrepancy. Enter a description of the inspection due.

(21) (W) Corrective Action. Upon completion of the inspection, enter "Inspection Completed."

(22) (M) Up/Down. Circle the Down arrow.

(23) (M) System/Reason. Enter "Postlaunch Rehabilitation," or other appropriate reason.

d. Signatures. Sign as appropriate.

e. Postlaunch Rehabilitation (Fix Phase)

(1) (M) A08 through A14 Job Control Number. Construct a JCN using the same organization code and Julian date as the control document (blocks A08 and A11). Enter an alphanumeric serial number, which has the same alphabetic character as the control document (block A14).

(2) (M) A19 Work Center. Enter the work center performing the maintenance.

(3) (M) A22 Work Unit Code. Enter the WUC of the item to be repaired/replaced.

(4) (W) A29 Action Organization. Enter the organization code of the organization performing the maintenance.

(5) (W) A32 Transaction Code. Enter the appropriate transaction code.

(6) (W) A34 Maintenance Level. Enter 1.

(7) (W) A35 Action Taken Code. Enter the appropriate action taken code.

(8) (W) A36 Malfunction Code. Enter the appropriate malfunction code.

(9) (M) A39 Items Processed. Enter the number of items processed.

(10) (W) A41 Man Hours. Enter the total number of Man Hours required by the work center personnel to perform the maintenance.

(11) (W) A45 Elapsed Maintenance Time. Enter the EMT (clock time) expended for maintenance.

(12) (M) A48 Type Equipment Code. Enter the TEC of the target type.

(13) (M) A52 Bureau/Serial Number. Enter the serial number of the target.

(14) (I) A58 When Discovered Code. Enter M.

(15) (M) A59 Type Maintenance. Enter P.

(16) (M) B08 and B12 Received Line. Enter the Julian date and time the maintenance action was reported.

(17) (W) B19 and B23 In Work Line. Enter the Julian date and time work was begun.

(18) (W) B30 and B34 Completed Line. Enter the Julian date and time the maintenance was completed.

(19) (W) E08 and G08 Manufacturer's Code. Enter the manufacturer's code of the component being removed/installed, if applicable.

(20) (W) E13 and G13 Serial Number. Enter the serial number of the component being removed/installed, if applicable.

(21) (W) E23 and G23 Part Number. Enter the part number of the component being removed/installed, if applicable.

(22) (W) E38 Date Removed. Enter the Julian date the component was removed, if applicable.

(23) (W) E42 and G38 Time/Cycles. Enter the total operating time/cycle of the component, if applicable.

(24) (M) 79 (H-Z) Failed/Required Material Index. If an engine component is involved, enter H.

(25) (M) 10 (H-Z) Failed/Required Material Action Taken. If an engine component is involved, enter 0.

(26) (M) 11 (H-Z) Failed/Required Material Malfunction Code. If an engine component is involved, enter 000.

(27) (M) 14 (H-Z) Failed/Required Material Manufacturer's Code. Enter the manufacturer's code, if applicable. If an engine component is involved, enter the TEC of the engine and the manufacturer's code of the component on the line below.

(28) (M) 19 (H-Z) Failed/Required Material Part Number. Enter the part number, if applicable. If an engine or engine component is involved, enter the serial number of the engine and the engine time prefixed by an E. On the line below, enter the part number of the engine component.

(29) (M) 41 (H-Z) Failed/Required Material Quantity. Enter the quantity, if applicable. If an engine component is involved, enter 0 for the engine and the quantity of components on the line below.

(30) (M) (H-Z) Failed/Required Material Project. Enter the project. If an engine component is involved, enter the project on the same line as the component information.

(31) (M) 45 (H-Z) Failed/Required Material Date Ordered. Enter the Julian date the item was ordered, if applicable.

(32) (M) 49 (H-Z) Failed/Required Material Requisition Number. Enter the requisition number, if applicable. If an engine component is involved, enter the requisition number on the same line as the component information.

(33) (M) 53 (H-Z) Failed/Required Material Date Received. Enter the Julian date the part was received, if applicable.

(34) (M) Entries Required. Mark the appropriate block(s).

(35) (I) Discrepancy. Enter a description of the maintenance to be performed.

(36) (W) Corrective Action. Enter a description of the maintenance performed.

f. Signatures: Sign as appropriate.

g. Postlaunch Rehabilitation On Engine (turn in Document)

(1) (M) A08 through A14 Job Control Number. Construct a JCN using the activity's organization code, the Julian date on which the target was inducted for inspection, and an alphanumeric serial number, i.e., B00, C00, etc.

(2) (X) A19 Work Center. Enter the work center performing the inspection.

(3) (M) A22 Work Unit Code. Enter an alphanumeric code, i.e., 03A0000, 03B0000, where A denotes the engine's first postlaunch rehabilitation inspection, B denotes the second, etc.

(4) (X) A29 Action Organization. Enter the organization code of the organization performing the maintenance action.

(5) (X) A32 Transaction Code. Enter the appropriate transaction code.

(6) (Y) A34 Maintenance Level. Enter 2.

(7) (X) A35 Action Taken Code. Enter 0.

(8) (X) A36 Malfunction Code. Enter 000.

(9) (Y) A39 Items Processed. Enter the total number of items processed.

(10) (Y) A41 Man Hours. Upon completion of the inspection, enter the total number of Man Hours required by work center personnel to perform the maintenance action. (This should correspond to the IMA VIDS/MAF)

(11) (Y) A45 Elapsed Maintenance Time. Enter the EMT (clock time) expended for the inspection. (This should correspond to the IMA VIDS/MAF)

(12) (M) A48 Type Equipment Code. Enter the TEC of the engine being inspected.

(13) (M) A52 Bureau/Serial Number. Enter the serial number of the engine.

(14) (M) A58 When Discovered Code. Enter O.

(15) (M) A59 Type Maintenance. Enter P.

(16) (M) B08 Received. Enter the Julian date the inspection was received.

(17) (Y) B19 In Work. Upon completion of maintenance, enter the Julian date the inspection commenced.

(18) (Y) B30 Completed. Upon completion of maintenance, enter the Julian date the inspection was completed.

(19) (W) E08 Manufacturer's Code. Enter the appropriate type equipment code for the engine.

(20) (M) E13 Serial Number. Enter the serial number of the engine.

(21) (M) E38 Date Removed. Enter the Julian date the engine was removed.

(22) (M) E42 Time/Cycle. Enter the time/cycle of the engine.

(23) (M) Entries Required. Mark the Logs and Rec blocks.

(24) (M) Discrepancy. Enter a description of the inspection.

(25) (X) Corrective Action. Upon completion of the inspection, enter the corrective action performed.

(26) (M) Up/Down. Circle the Down arrow.

(27) (M) System/Reason. Enter "Postlaunch Rehabilitation."

h. Signatures. Sign as appropriate.

5.5.5.1.14 Cannibalization. Cannibalization is the act of removing serviceable parts from one target for installation on another target. The cannibalization and subsequent replacement of a component from an end item (on-equipment cannibalization) is documented on a single VIDS/MAF in the normal manner of a removed and replaced component. Cannibalization of an item from a repairable component or subassembly (off-equipment cannibalization) is documented in the (H-Z) Failed/Required Material section of the VIDS/MAF for the component/subassembly from which the item was cannibalized (see figure 5-5-27). The removal item is considered to have caused AWP but is not a failed part of the component/subassembly from which it was cannibalized (it may be a failed part of the component for which it was cannibalized). Identify the removed item in the normal manner of a required part that caused AWP and transfer the requisition to the new JCN.

NOTE

The cancellation of a cannibalization JCN should occur only if no cannibalization action has been physically started. In the event that the actual removal for cannibalization has been initiated/completed and the requirement has then been cancelled, reinstall the cannibalized item, documenting the action as if it were to facilitate other maintenance.

a. Distribution: VIDS/MAF Copies 1 and 5 to work center, copy 2 to QA, copy 3 to Maintenance Control (VIDS board), and copy 4 to Maintenance Control (TDB).

b. Legend:

(1) (I) The initiator/originator will fill in these block items at the time the need for maintenance is discovered.

(2) (M) Maintenance Control will fill in these block items prior to commencement of maintenance.

(3) (W) The work center will fill in these block items during or after maintenance, as appropriate.

(4) (M) Material Control will fill in these block items on copy 1 of the VIDS/MAF and will notify Maintenance Control to annotate copy 3 on the VIDS board.

c. Entries:

(1) (M) A08 through A14 Job Control Number. Construct a JCN using the activity's organization Code, the Julian date on which the target was inducted for maintenance, and a numeric serial number.

(2) (M) A19 Work Center. Enter the work center performing the maintenance.

(3) (W) A22 Work Unit Code. Enter the WUC of the item being removed.

(4) (W) A29 Organization Code. Enter the organization code of the organization performing the maintenance.

(5) (W) A32 Transaction Code. Enter 18 for all end items except engine components. Enter 19 for engine components.

[illegible]

Figure 5-5-27. Cannibalization.

- (6) (W) A34 Maintenance Level. Enter 1.
- (7) (W) A35 Action Taken Code. Enter T.
- (8) (W) A36 Malfunction Code. Enter 812, 813, or 814.
- (9) (W) A39 Items Processed. Enter the total number of items processed.
- (10) (W) A41 Man Hours. Enter the total number of Man Hours required by the work center personnel to perform the maintenance action.
- (11) (W) A45 Elapsed Maintenance Time. Enter the EMT (clock time) expended for maintenance.
- (12) (M) A48 Type Equipment Code. Enter the TEC of the target type.
- (13) (M) A52 Bureau/Serial Number. Enter the serial number of the target.
- (14) (M) A58 When Discovered Code. Enter O.
- (15) (M) A59 Type Maintenance. Enter B.
- (16) (M) B08 and B12 Received Line. Enter the Julian date and time the maintenance action was reported.
- (17) (W) B19 and B23 In Work Line. Enter the Julian date and time the work was begun.
- (18) (W) B30 and B34 Completed Line. Enter the Julian date and time the maintenance action was completed.
- (19) (W) E08 and G08 Manufacturer's Code. Enter the manufacturer's code of the item(s) being removed/installed. If the engine is being cannibalized, enter the TEC of the engine. If an engine component is being cannibalized, enter the manufacturer's code of the component.
- (20) (W) E13 and G13 Serial Number. Enter the serial number of the item being removed/installed. If the engine is being cannibalized, enter the serial number of the engine. If an engine component is being cannibalized, enter the serial number of the component.
- (21) (W) E23 and G23 part Number. Enter the part number of the item being removed/installed. If the engine is being cannibalized, leave blank. If an engine component is being cannibalized, enter the part number of the component.
- (22) (W) E38 Date Removed. Enter the Julian date the item was removed.
- (23) (W) E42 and G38 Time/Cycles. Enter the time/cycle of the item being removed/installed.
- (24) (W) 79 (H-Z) Failed/Required Material Index. If an engine component is being cannibalized, enter H.
- (25) (W) 10 (H-Z) Failed/Required Material Action Taken. If an engine component is being cannibalized, enter 0.
- (26) (W) 11 (H-Z) Failed/Required Material Malfunction Code. If an engine component is being cannibalized, enter 000.
- (27) (W) 14 (H-Z) Failed/Required Material Manufacturer's Code. Enter the manufacturer's code of the item to be replaced. If an engine or engine component is being cannibalized, enter the TEC of the engine. If an engine component is being cannibalized, enter the TEC of the engine. If an engine component is being cannibalized, also enter the manufacturer's code of the component on the line below the engine TEC.
- (28) (W) 19 (H-Z) Failed/Required Material Part Number. Enter the part number of the part to be replaced. If an engine or engine component is being cannibalized, enter the serial number of the engine. If an engine component is being cannibalized, also enter the part number of the component on the line below the engine serial number.
- (29) (M) 41 (H-Z) Failed/Required Material Quantity. Enter the number of items required. If an engine component is being cannibalized, enter 0 for the engine and the number of components required on the line below.
- (30) (M) 43 (H-Z) Failed/Required Material Priority. Enter the priority. If an engine component is being cannibalized, enter the priority on the same line as the component information.
- (31) (M) 45 (H-Z) Failed/Required Material Date Ordered. Enter the Julian date the item was ordered.
- (32) (M) 49 (H-Z) Failed/Required Material Requisition Number. Enter the requisition number.
- (33) (W) 53 (H-Z) Failed/Required Material Date Received. Enter the item was received.
- (34) (M) Entries Required. Mark the Logs and Rec blocks.

(35) (M) Discrepancy. Enter a description of the maintenance to be performed.

(36) (W) Corrective Action. Upon completion of maintenance, enter a description of the maintenance performed.

d. Signatures. Sign as appropriate.

5.5.5.1.15 Configuration Change. If a removal and an installation action are required to perform the configuration change, two separate VIDS/MAFs are required: one for the removal action, and one for the installation action. If only one of the actions is required, then only one VIDS/MAF is required (see figure 5-5-28).

a. Distribution: VIDS/MAF Copies 1 and 5 to the work center, copy 2 to QA, copy 3 to Maintenance Control (VIDS board), and copy 4 to Maintenance Control (TDB).

b. Legend:

(1) (M) Maintenance Control will fill in these block items prior to commencement of maintenance.

(2) (W) The work center will fill in these block items during or after maintenance, as appropriate.

c. Entries:

(1) (M) A08 through A14 Job Control Number. Construct a JCN using the activity's organization Code, the Julian date on which the target was inducted for inspection, and a numeric serial number.

(2) (M) A19 Work Center. Enter the work center performing the modification or change.

(3) (W) A22 Work Unit Code. Enter the WUC of the kit being replaced/removed.

(4) (W) A29 Action Organization Code. Enter the organization code of the organization performing the configuration change.

(5) (W) A32 Transaction Code. Enter 16 or 17, as appropriate.

(6) (W) A34 Maintenance Level. Enter 1.

(7) (W) A35 Action Taken Code. Enter P or Q, as appropriate.

(8) (W) A36 Malfunction Code. Enter 807.

(9) (W) A39 Items Processed. Enter the number of items processed.

(10) (W) A41 Man Hours. Enter the total number of Man Hours expended in performing the configuration change.

(11) (W) A45 Elapsed Maintenance Time. Enter the EMT (clock time) expended for the configuration change.

(12) (M) A48 Type Equipment Code. Enter the TEC of the target.

(13) (M) A52 Bureau/Serial Number. Enter the serial number of the target.

(14) (M) A56 When Discovered Code. Enter O.

(15) (M) A59 Type Maintenance Code. Enter B.

(16) (M) B08 and B12 Received Line. Enter the Julian date and time the configuration change was received.

(17) (W) B19 and B23 In Work Line. Enter the Julian date and the time the maintenance action was begun.

(18) (W) B30 and B34 Completed Line. Enter the Julian date and time the configuration change was completed.

(19) (W) E08 and G08 Manufacturer's Code. Enter the manufacturer's code of the kit being removed/installed.

(20) (W) E13 and G13 Serial Number. Enter 0.

(21) (W) E23 and G23 Part Number. Enter the part number of the kit being removed/installed.

(22) (W) E38 Date Removed. Enter the Julian date the item was removed.

(23) (W) E42 and G38 Time/Cycles. Enter F0000.

(24) (M) Entries Required. Mark the appropriate block(s).

(25) (M) Discrepancy. Enter a narrative of the configuration change to be performed.

(26) (W) Corrective Action. Enter a narrative of the maintenance performed.

No. SWP 4826 Copy 1 5 PART FORM WORK CENTER REGISTER, CONTROL AND PROCESSING COPY USE BALL-POINT PEN PRESS VIDS/MAF OPNAV 4790/60 (REV. 5-88) S/N 0107-LF-002-5900 HARD										ENTRIES REQUIRED SIGNATURE NONE LOGS REC <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> James							
LOCAL USE		ACCUMULATED WORK HOURS						ACCUMULATED AWM HOURS									
		NAME/SHIFT	TOOL BOX	DATE	MAN HOURS	ELAPSED M/T	DATE	TIME	REASON	HOURS							
		Jones	210-6	5163	1 0	1 0											
		Smith			1 0												
REFERENCE																	
(H-Z) FAILED/REQUIRED MATERIAL																	
79 INDEX	08 F/P	09 AWP	10 A/T	11 MAL	14 MFGR	19 PART NUMBER	34 REF SYMBOL	41 QTY	PROJ	43 PRI	45 DATE ORD	49 REQ NO	53 DATE REC				
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>															
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>															
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>															
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>															
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>															
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>															
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>															
A22 WORK UNIT CODE 59260	A29 ACTION ORG WAT	A32 TRANS 17	A34 MAINT/L 1	A35 ACT TAKEN Q	A36 MAL CODE 807	A39 ITEMS/P 1	A41 MAN HOURS 2 0	A45 ELAPSED M/T 1 0	F08 INTERIM <input type="checkbox"/>	TECHNICAL DIRECTIVE IDENTIFICATION							
A48 TYPE EQUIP MFDA	A52 BU/SER NUMBER 555102	A58 DISCO 0	A59 T/M B	A60 POSIT	A62 FID	A65 SAFETY/EI SER	A69 METER	SE MFGR	A74	INVENTORY F22 PERM LIMIT CODE F21		F28					
REPAIR CYCLE DATE TIME EOC				REMOVED/OLD ITEM E09 MFGR E13 SERIAL NUMBER				INSTALLED/NEW ITEM G08 MFGR G13 SERIAL NUMBER									
RECEIVED B08 5163 B12 0900 B16								77646 0									
IN WORK B19 5163 B23 0900 B27				E23 PART NUMBER E38 DATE REMOVED				G23 PART NUMBER 88630-4									
COMPLETED B30 5163 B34 1000				E42 TIME/CYCLES E47 TIME/CYCLES E52 TIME/CYCLES				G38 TIME/CYCLES G43 TIME/CYCLES G48 TIME/CYCLES									
AWAITING MAINTENANCE B38 B39 B43 B44 B48 B49 HOUR HOUR HOUR S S S				DISCREPANCY Configure With AN/DSQ-37 MDI Scoring Subkit.													
MAINTENANCE/SUPPLY RECORD JOB STATUS DATE TIME EOC				CORRECTIVE ACTION Installed AN/DSQ-37 MDI Scoring Subkit.													
B53 B54 B58 B62																	
B65 B66 B70 B74																	
C08 C09 C13 C17																	
C20 C21 C25 C29																	
C32 C33 C37 C41																	
C44 C45 C49 C53																	
C56 C57 C61 C65																	
D08 D09 D13 D17																	
JOB CONTROL NUMBER A08 ORG A11 DAY A14 SER A17 SUP WAT 631 429				A19 WORK CENTER 210				CORRECTED BY Leon				INSPECTED BY Frank		SUPERVISOR Farris		MAINT CONTROL Sawyer	
UP <input checked="" type="checkbox"/> MODEX PRI				TURN-IN DOCUMENT				SYSTEM/REASON AN/DSQ-37				MCN					
DOWN <input type="checkbox"/>																	

Figure 5-5-28. Configuration Change.

(27) (M) Up/Down. Circle the appropriate arrow.

d. Signatures. Sign as appropriate.

5.5.5.1.16 Assisting Work Center. When more than one work center works on the same maintenance action, one of them is designated the primary work center and the others are assisting work centers. Each work center participating in the maintenance action will generate a separate VIDS/MAF with the same JCN. The primary work center describes the original method of discovery and accounts for the number of items processed (see figure 5-5-29). Assisting work centers document when discovered code "V" (see figure 5-5-30). If the assisting and the primary work centers work on the same work unit coded item, the assisting work center enters "0" items processed. If they work on different work unit coded items, the assisting work center accounts for the number of items processed.

a. Distribution: VIDS/MAF Copies 1 and 5 to the work center, copy 2 to QA, copy 3 to Maintenance Control (VIDS board), and copy 4 to Maintenance Control (TDB).

b. Legend:

(1) (I) The initiator/originator will fill in these block items at the time the need for maintenance is discovered.

(2) (M) Maintenance Control will fill in these block items prior to commencement of maintenance.

(3) (W) The work center will fill in these block items during or after maintenance, as appropriate.

c. Entries:

d. Primary Work Center

(1) (M) A08 through A14 Job Control Number. Construct a JCN using the activity's organization Code, the Julian date the discrepancy was reported, and a numeric serial number.

(2) (M) A19 Work Center. Enter the work center performing the maintenance.

(3) (W) A22 Work Unit Code. Enter the appropriate WUC for the item being repaired/replaced.

(4) (W) A29 Action Organization. Enter the organization code of the organization performing the maintenance action.

(5) (W) A32 Transaction Code. Enter the appropriate transaction code.

(6) (W) A34 Maintenance Level. Enter 1.

(7) (W) A35 Action Taken Code. Enter the action taken code.

(8) (W) A36 Malfunction Code. Enter the appropriate malfunction code.

(9) (W) A39 Items Processed. Enter the total number of items processed.

(10) (W) A41 Man Hours. Enter the total number of Man Hours required by the work center to personnel to perform the maintenance action.

(11) (W) A45 Elapsed Maintenance Time. Enter the EMT expended for the maintenance action.

(12) (M) A48 Type Equipment Code. Enter the TEC of the target type.

(13) (M) A52 Bureau/Serial Number. Enter the serial number of the target.

(14) (M) A58 When Discovered Code. Enter the appropriate when discovered code.

(15) (W) A59 Type Maintenance. Enter the appropriate type maintenance code.

(16) (I) B08 and B12 Received. Enter the Julian date and time the maintenance action was received.

(17) (W) B19 and B23 In Work. Enter the Julian date and the time the maintenance action was begun.

(18) (W) B30 and B34 Completed. Enter the Julian date and time the maintenance action was completed.

(19) (M) 79 (H-Z) Failed/Required Material Index. If an engine component is involved, enter H.

(20) (M) 10 (H-Z) Failed/Required Material Action Taken. If an engine component is involved, enter 0.

(21) (M) 11 (H-Z) Failed/Required Material Malfunction Code. If an engine component is involved, enter 000.

No. SWP 4826 Copy 1 5 PART FORM WORK CENTER REGISTER, CONTROL AND PROCESSING COPY USE BALL-POINT PEN PRESS VIDS/MAF OPNAV 4790/60 (REV. 5-88) S/N 0107-LF-002-5900 HARD										ENTRIES REQUIRED SIGNATURE NONE <input checked="" type="checkbox"/> LOGS <input type="checkbox"/> REC <input type="checkbox"/> Mounter					
LOCAL USE		ACCUMULATED WORK HOURS						ACCUMULATED AWM HOURS							
		NAME/SHIFT	TOOL BOX	DATE	MAN HOURS	ELAPSED M/T	DATE	TIME	REASON	HOURS					
		Ridge	28	5191	1: 5	1: 5									
		Ridge	28	5196	3: 0	1: 5									
		Ridge	28	5204	7: 0	3: 5									
		Ridge	28	5206	4: 0	2: 5									
REFERENCE		Ridge	28	5207	12: 0	8: 0									
		Ridge	28	5210	12: 0	6: 0									
(H-Z) FAILED/REQUIRED MATERIAL															
79 INDEX	08 F/P	09 AWP	10 A/T	11 MAL	14 MFGR	19 PART NUMBER	34 REF SYMBOL	41 QTY	43 PROJ	45 DATE ORD	49 REQ NO	53 DATE REC			
H	<input checked="" type="checkbox"/>	<input type="checkbox"/>	R	135	04638	C81937		1							
	<input type="checkbox"/>	<input type="checkbox"/>													
	<input type="checkbox"/>	<input type="checkbox"/>													
	<input type="checkbox"/>	<input type="checkbox"/>													
	<input type="checkbox"/>	<input type="checkbox"/>													
	<input type="checkbox"/>	<input type="checkbox"/>													
	<input type="checkbox"/>	<input type="checkbox"/>													
TECHNICAL DIRECTIVE IDENTIFICATION															
A22 WORK UNIT CODE 5316A	A29 ACTION ORG WAT	A32 TRANS 12	A34 MAINT/L 1	A35 ACT TAKEN C	A36 MAL CODE 135	A39 ITEMS/P 1	A41 MAN HOURS 39	A45 ELAPSED M/T 5 22 5	F08 INTERIM <input type="checkbox"/>	F09 CODE	P11 BASIC NO.	F15 RV	F16 AM	F17 PART	F19 KIT
A48 TYPE EQUIP AFCE	A52 BU/SER NUMBER 555102	A58 DISCO H	A59 T/M B	A60 POSIT	A62 FID	A65 SAFETY/EI SER	A69 METER	SE MFGR	A74	INVENTORY F22 PERM LIMIT CODE F21		F28			
REPAIR CYCLE DATE TIME EOC				REMOVED/OLD ITEM E09 MFGR E13 SERIAL NUMBER				INSTALLED/NEW ITEM G08 MFGR G13 SERIAL NUMBER							
RECEIVED				B08 5190	B12 0800	B16									
IN WORK				B19 5191	B23 0730	B27	E23 PART NUMBER	E38 DATE REMOVED	G23 PART NUMBER 88630-4						
COMPLETED				B30 5210	B34 1400		E42 TIME/CYCLES	E47 TIME/CYCLES	E52 TIME/CYCLES	G38 TIME/CYCLES	G43 TIME/CYCLES	G48 TIME/CYCLES			
AWAITING MAINTENANCE B38 B39 B43 B44 B48 B49 HOUR S HOUR S HOUR S				DISCREPANCY Drone Throttle Cable Excess Binding.											
MAINTENANCE/SUPPLY RECORD JOB STATUS DATE TIME EOC				CORRECTIVE ACTION Replaced Drone Throttle Cable And Rerigged. Checks Good With FATTs.											
B53 B54 B58 B62				CORRECTED BY Ridge								PILOT/INITIATOR Denver			
B65 B66 B70 B74				INSPECTED BY Denver											
C08 C09 C13 C17				SUPERVISOR Cheeves											
C20 C21 C25 C29				MAINT CONTROL Dudley											
C32 C33 C37 C41				UP <input type="checkbox"/>											
C44 C45 C49 C53				DOWN <input checked="" type="checkbox"/>											
C56 C57 C61 C65				MODEX											
D08 D09 D13 D17				PRI											
JOB CONTROL NUMBER A08 ORG A11 DAY A14 SER A17 SUP WAT 190 667				TURN-IN DOCUMENT								SYSTEM/REASON Throttle Cable			
A19 WORK CENTER 210				MCN											

Figure 5-5-29. Primary Work Center VIDS/MAF.

No. SWP 4826 Copy 1 5 PART FORM WORK CENTER REGISTER, CONTROL AND PROCESSING COPY VIDS/MAF OPNAV 4790/60 (REV. 5-88) S/N 0107-LF-002-5900 USE BALL-POINT PEN PRESS HARD						ENTRIES REQUIRED SIGNATURE NONE <input checked="" type="checkbox"/> LOGS <input type="checkbox"/> REC <input type="checkbox"/> Salk							
LOCAL USE		ACCUMULATED WORK HOURS				ACCUMULATED AWM HOURS							
		NAME/SHIFT	TOOL BOX	DATE	MAN HOURS	ELAPSED M/T	DATE	TIME	REASON	HOURS			
		Smith	1&2	5205	2 0	2 0							
		Smith	1&2	5206	3 0	3 0							
		Sabin	1&2	5207	2 0	2 0							
		Sabin	1&2	5210	3 0	3 0							
REFERENCE													
(H-Z) FAILED/REQUIRED MATERIAL													
79 INDEX	08 F/P	09 AWP	10 A/T	11 MAL	14 MFGR	19 PART NUMBER	34 REF SYMBOL	41 QTY	43 PROJ	45 DATE ORD	49 REQ NO	53 DATE REC	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>											
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>											
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>											
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>											
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>											
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>											
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>											
A22 WORK UNIT CODE 5316A	A29 ACTION ORG WAT	A32 TRANS 11	A34 MAINT/L 1	A35 ACT TAKEN C	A36 MAL CODE 135	A39 ITEMS/P 0	A41 MAN HOURS 10 0	A45 ELAPSED M/T 10 0	F08 INTERIM <input type="checkbox"/>	TECHNICAL DIRECTIVE IDENTIFICATION			
A48 TYPE EQUIP AFCE	A52 BU/SER NUMBER 555102	A58 DISCO V	A59 T/M B	A60 POSIT	A62 FID	A65 SAFETY/ EI SER	A69 METER	SE MFGR	A74	INVENTORY F22 PERM LIMIT CODE F21	F16 AM	F17 PART	F19 KIT
REPAIR CYCLE DATE TIME EOC				REMOVED/OLD ITEM E09 MFGR E13 SERIAL NUMBER				INSTALLED/NEW ITEM G08 MFGR G13 SERIAL NUMBER					
RECEIVED				B08 5205	B12 1400	B16							
IN WORK				B19 5205	B23 1400	B27	E23 PART NUM- BER		E38 DATE REMOVED		G23 PART NUMBER		
COMPLETED				B30 5210	B34 1030		E42 TIME/ CYCLES		E47 TIME/ CYCLES		E52 TIME/ CYCLES		
AWAITING MAINTENANCE							DISCREPANCY						
B38 B39 B43 B44 B48 B49							Assist Work Center 210 With Throttle Cable Problem.						
HOUR S <input type="checkbox"/> HOUR S <input type="checkbox"/> HOUR S <input type="checkbox"/>													
MAINTENANCE/SUPPLY RECORD							PILOT/INITIATOR Pasteur						
JOB STATUS DATE TIME EOC							CORRECTIVE ACTION						
B53 B54 B58 B62							Adjusted Throttle Cable.						
B65 B66 B70 B74													
C08 C09 C13 C17													
C20 C21 C25 C29													
C32 C33 C37 C41													
C44 C45 C49 C53													
C56 C57 C61 C65													
D08 D09 D13 D17													
JOB CONTROL NUMBER							CORRECTED BY						
A08 A11 A14 A17 ORG DAY SER SUP WAT 190 667							Sabin						
A19 WORK CENTER 110							INSPECTED BY Curie		SUPERVISOR Roentgen		MAINT CONTROL Watson		
							UP <input type="checkbox"/>		MODEx		PRI		
							DOWN <input checked="" type="checkbox"/>		TURN-IN DOCUMENT		SYSTEM/REASON		
											MCN		
											Throttle Cable		

Figure 5-5-30. Assisting Work Center.

(22) (M) 14 (H-Z) Failed/Required Material Manufacturer's Code. Enter the manufacturer's code, if applicable. If an engine component is involved, enter the TEC of the engine and the manufacturer's code of the component on the line below.

(23) (M) 19 (H-Z) Failed/Required Material Part Number. Enter the part number, if applicable. If an engine or engine component is involved, enter the serial number of the engine and the engine time prefixed by an E. On the line below, enter the part number of the engine component.

(24) (M) 41 (H-Z) Failed/Required Material Quantity. Enter the quantity, if applicable. If an engine component is involved, enter 0 for the engine and the quantity of components on the line below.

(25) (M) (H-Z) Failed/Required Material Project. Enter the project code. If an engine component is involved, enter the project code on the same line as the component information.

(26) (m) 45 (H-Z) Failed/Required Material Date Ordered. Enter the Julian date the item was ordered, if applicable.

(27) (m) 49 (H-Z) Failed/Required Material Requisition Number. Enter the requisition number, if applicable. If an engine component is involved, enter the requisition number on the same line as the component information.

(28) (M) 53 (H-Z) Failed/Required Material Date Received. Enter the Julian date the part was received, if applicable.

(29) (M) Entries Required. Mark the appropriate block(s).

(30) (M) Discrepancy. Enter a description of the type of maintenance to be performed.

(31) (W) Corrective Action. Upon completion of the maintenance, enter a description of the maintenance action performed.

(32) (M) Up/Down. Circle the appropriate arrow.

(33) (M) Priority. Enter priority.

(34) (M) System/Reason. Enter the system or reason.

e. Signatures: Sign as appropriate.

f. Assisting Work Center:

(1) (M) A08 through A14 Job Control Number. Enter the same JCN as the primary work center VIDS/MAF.

(2) (W) A22 Work Unit Code. Enter the WUC of the item being repaired.

(3) (W) A29 Action Organization Code. Enter the same action organization code as the primary work center VIDS/MAF.

(4) (W) A32 Transaction Code. Enter 11.

(5) (W) A34 Maintenance Level. Enter the same number as on the primary work center MAF.

(6) (W) A35 Action Taken Code. Enter the appropriate action taken code.

(7) (W) A36 Malfunction Code. Enter the same malfunction code as on the primary work center VIDS/MAF.

(8) (W) A41 Man Hours. Enter the total number of Man Hours required by the work center personnel to perform the maintenance action.

(9) (W) A45 Elapsed Maintenance Time. Enter the EMT (clock time) expended for the maintenance.

(10) (M) A48 Type Equipment Code. Enter the same TEC as on the primary work center VIDS/MAF.

(11) (M) A52 Bureau/Serial Number. Enter the same serial number as on the primary work center VIDS/MAF.

(12) (M) A58 When Discovered Code. Enter V.

(13) (W) A59 Type Maintenance. Code. Enter the same type maintenance code as on the primary work center VIDS/MAF.

(14) (M) B08 and B12 Received. Enter the Julian date and time the discrepancy was discovered.

(15) (W) B19 and B23 In Work. Enter the Julian date and the time the maintenance was started.

(16) (W) B30 and B34 Completed. Enter the Julian date and time the maintenance action was completed.

(17) (M) Discrepancy. Enter a narrative of the type of maintenance to be performed.

(18) (W) Corrective Action. Enter a narrative of the type of maintenance performed.

g. Signatures. Sign as appropriate.

SECTION 6

Weapons Handling Procedures

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CHAPTER 6.1

Introduction

6.1.1 General

6.1.1.1 This section provides pertinent information that will promote a standardized, safe, and efficient program for handling airborne weapons at Navy and Marine Corps aviation activities ashore and afloat.

6.1.1.2 Numerous regulations and requirements are applicable to any command handling explosives. To avoid repetition in subsequent chapters of this section, items that are general in nature and pertain to all commands will be covered in this chapter. Special guidelines for handling conventional explosives within specific command groups will be addressed in the remaining chapters of this section.

6.1.2 Definition of Terms

a. **Warning:** An operating procedure, practice, or condition, etc., which may result in injury or death if not carefully observed or followed.

b. **Caution:** An operating condition, procedure, practice, etc., which, if not strictly observed, may damage equipment.

c. **Note:** An operating procedure, practice, condition, etc., which requires emphasis.

d. **Shall:** Used only when application of a procedure is mandatory.

e. **Should:** Used only when application of a procedure is recommended.

f. **May/Need:** Used only when application of a procedure is optional.

g. **Will:** Used only to indicate futurity, never to indicate any degree of requirement for application of a procedure.

6.1.3 Responsibilities

6.1.3.1 **Commanding Officer.** In addition to the duties and responsibilities inherent in the position of commanding officer as set forth in U.S. Navy regulations or as issued by

higher authority, the commanding officer is responsible for the safety of his/her command and for the training of assigned personnel. The commanding officer shall ensure that all ordnance handling evolutions at his/her command are conducted safely and in accordance with existing directives.

6.1.3.2 **Weapons Officer.** The weapons officer is responsible to the commanding officer for supervising and directing the proper requisitioning, safe handling, stowage, and issuance of the command's complement of airborne weapons. The weapons officer shall ensure that ammunition magazines and lockers are properly maintained and that all personnel tasked to handle explosives are trained in proper and safe handling procedures pertaining to the ordnance items they will handle. The weapons officer will also coordinate with assigned aviation unit commanders or their representatives in determining the type, quantity, and delivery times for ordnance required in support of the unit's assigned mission. The weapons officer will administer and ensure compliance with the command's ordnance explosive handling qualification and certification program.

6.1.3.3 **Safety Officer.** The safety officer shall be thoroughly familiar with the provisions of this and all other instructions issuing explosive safety regulations. The safety officer shall act as staff advisor to the commanding officer, department heads, and other personnel in all matters relating to explosive safety. Safety officers have no authority to waive or alter safety regulations nor shall they permit violation of such regulations by others. The safety officer shall act positively to eliminate any hazard existing in operations under his/her jurisdiction.

6.1.3.4 **Ordnance Officer.** The ordnance officer assigned to shore-based ordnance industrial activities is responsible to the commanding officer for supervising and directing the maintenance, movement, safety, industrial processing, and inventory control of explosives and weapons material in support of fleet commanders in chief, type commanders, and other activities responsible for weapons inventory management. In addition, the ordnance officer administers and monitors the command's explosive handling qualification and certification program.

6.1.4 Weapons Handling and Movement

6.1.4.1 Weapons handling evolutions introduce a degree of risk and require careful planning and preparation. The

necessity to train for and conduct combat operations requires the acceptance of certain risks which cannot be avoided in the handling of explosive weapons. Commanding officers shall continually weigh the requirement to conduct each weapons evolution against the additional risk that is being interjected and accept only those evolutions in which the need clearly outweighs the risk.

6.1.4.2 The presence of explosives outside designated magazines increases the danger of a fire or explosion. The greater the quantities of weapons involved, the greater the risk. To minimize the risk, only that quantity of weapons required to sustain operations shall be exposed.

6.1.4.3 Breakout and movement of ordnance requires pre-planning and close coordination between the weapons department and receiving activities. Prior to commencement of explosive ordnance handling evolutions, all personnel concerned shall be thoroughly indoctrinated in the safety precautions applicable to the ordnance being handled. Lack of sufficient indoctrination shall result in an order to cease operations until such indoctrination is accomplished.

6.1.4.4 A qualified and certified Safety Observer (SO) shall be designated and shall be present during all ordnance handling evolutions. This observer has the authority to stop any operation considered unsafe.

6.1.4.5 Except as stated in paragraph 6.1.16, only trained and qualified personnel shall be permitted to take part in evolutions involving explosives. They shall be certified in accordance with OPNAVINST 8020.14/MCO P8020.11 (NOTAL) or MCO 8023.3 (NOTAL) and applicable type commander instructions.

6.1.4.6 Only authorized equipment shall be used for handling ordnance. All cranes, trucks, slings, strongbacks, etc., shall be inspected for completeness and proper condition prior to each day's use. Each piece of equipment shall be properly marked or tagged showing safe working load and the date of last weight testing. Equipment with expired test dates shall not be used.

6.1.4.7 Weapons arming and dearming shall be conducted in designated arming and dearming areas. When forward firing weapons are involved, and the Naval Air Systems Command weapons and stores loading manual and checklist so require, the area ahead of the aircraft shall be cleared and maintained clear until completion of the arming and dearming.

6.1.4.8 Arming and dearming shall be conducted only while the aircraft is at a complete stop and control of that aircraft has been turned over to the arming and dearming supervisor. All arming and dearming signals shall be in accordance with applicable Naval Air Training and Operating Procedures Standardization (NATOPS) manuals and figure 6-1-1. Signal wands used for night operations shall be marked or taped in accordance with figure 6-1-2. If a conflict exists between the instruction and the applicable NATOPS, the NATOPS manual shall take precedence.

6.1.5 Explosives Handling Personnel Qualification and Certification (Qual/Cert) Program

6.1.5.1 The ordnance explosives handling personnel qualification and certification program was initiated as a means of standardizing the qualifications of those personnel whose duties require them to participate in any evolution involving explosive material.

6.1.5.2 All personnel, military and civilian, engage in or tasked to engage in handling explosives shall be qualified in accordance with OPNAVINST 8020.14/MCO P8020.11 (NOTAL), COMNAVSURFPACINST 8023.1J (NOTAL), COMNAVSURFLANTINST 8023.4G (NOTAL), COMNAVRESFORINST 8023.1G (NOTAL), COMNAVAIRLAN-TINST 8023.5H (NOTAL), COMNAVAIRPACINST 8023.3G (NOTAL), CNATRAININST 8023.1F (NOTAL) and/or MCO 8023.3 (NOTAL).

6.1.5.3 All personnel in the naval vessel tasked to handle explosive ordnance shall be thoroughly trained, qualified, and certified in accordance with OPNAVINST 8020.14/MCO P8020.11 (NOTAL) and applicable type commander instructions prior to engaging in any evolution in which explosives are involved.

6.1.5.4 Certification of Marine Corps ordnance personnel, prior to embarking aboard amphibious aviation ships, is the responsibility of the Marine squadron commander. Certification of the ships force Navy and Marine Corps aviation ordnance handling team shall be made by the ship's commanding officer following satisfactory demonstration of all aspects of ordnance handling evolutions during amphibious refresher training exercises. The certification shall be made after the satisfactory results of the aviation ordnance safety survey have been reported to the ships commanding officer and prior to authorizing live ordnance evolutions.





Arming Signals			
Signal		Meaning	Response
Day	Night		
<p>1. Arming Supervisor: Hands overhead with finger tips touching.</p> 	RED banded wands overhead with tips touching.	Pilot/Copilot/NFO: Check all armament switches OFF or SAFE.	Pilot/Copilot/NFO: Raise both hands into view of arming supervision after or checking switch positions. (Hands remain in view during check and hookup.)
<p>2. Arming Supervisor: One hand overhead; point to arming crew-members with other hand.</p> 	Same as day but with RED banded wands.	Arming Crew: Perform stray voltage checks.	Arming Crew: Give "thumbs up" to arming supervisor if no stray voltage exists. "Thumbs down" indicates stray voltage problems. Night: Vertical sweep with flashlight indicates no stray voltage. Horizontal sweep indicates stray voltage.
<p>3. Arming Supervisor: Raise fist, extended upward to meet horizontal palm of other hand.</p> 	Form a tee with RED banded wands.	Arming Crew: Arms weapons (as applicable).	Arming Crew: Give arming supervisor "thumbs up" when arming completed and clear immediate area. "Thumbs down" if malfunction exists. Night: Vertical sweep with flashlight indicates arming completed. Horizontal sweep indicates malfunction.
<p>4. Arming Supervisor: Raise both hands with fingers pointing to sound attenuators.</p> 	Same as day. Tips of RED band wands touching sound attenuators.	Arming Crew: Perform missile check.	Pilot: Give arming supervisor "thumbs up" if tone is heard. "Thumbs down" if no tone. Night: Vertical sweep with flashlight indicating good tone or horizontal sweep with flashlight indicating no tone.
<p>Note</p> <p>The applicable signal given by the arming/safing supervisor should be held in the positions shown until that particular revolution (e.g., arming, safing, stray voltage) is completed.</p>			

Figure 6-1-1. Aircraft Arming and Safing Signals


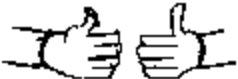
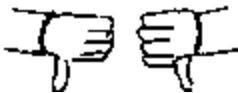

Arming Signals			
Signal		Meaning	Response
Day	Night		
<p>5. Arming Supervisor: Insert finger of one hand into clenched fist of other hand and give extracting motion.</p> 	<p>Touch tips of RED banded wands in front of body. Then move one wand laterally in a sweeping motion.</p>	<p>Arming Crew: Remove bomb rack/pylon safety pins.</p>	<p>Arming Crew: Shows pins to arming supervisor and clear immediate area. Night: Same as signal 3 above.</p>
<p>6. Arming Supervisor: Give Pilot</p> <p>(a) Thumbs up.</p>  <p>(b) Thumbs down.</p> 	<p>(a) Vertical sweep with RED banded wand.</p> <p>(b) Horizontal sweep with RED banded wand.</p>	<p>Pilot:</p> <p>(a) Aircraft armed and all personnel and equipment clear.</p> <p>(b) Aircraft down for weapons.</p>	<p>Pilot:</p> <p>(a) Acknowledge with similar signal.</p> <p>(b) Acknowledge with similar signal.</p>
<p>7. Arming Supervisor/Observer: Crossed arms overhead, fists clenched.</p> 	<p>Crossed standard RED wands held overhead.</p>	<p>Suspend all arming/ safety operations on aircraft.</p>	<p>Suspend arming and await further instructions.</p>

Figure 6-1-1. Aircraft Arming and Safing Signals (Cont'd)



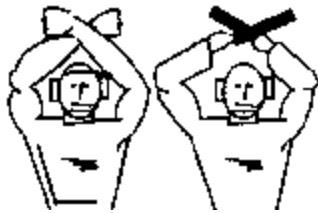

Arming Signals			
Signal		Meaning	Response
Day	Night		
<p>1. Safing Supervisor: Hands overhead with finger tips touching.</p> 	RED banded wands overhead with tip touching.	Pilot/Copilot/NFO: Check all armament switches OFF or SAFE.	Pilot/Copilot/NFO: Raise both hands into view of safing supervisor after checking switch position (Hands remain in view during safing.)
<p>2. Safing Supervisor: One hand overhead, point to safing crewmember with other hand.</p> 	Safing as day but with RED banded wands.	Safing Crew: Safe weapons (as applicable).	<p>Safing Crew: After safing, give safing supervisor "thumbs up" and move clear of aircraft.</p> <p>Night: Vertical sweep with flashlight when safing is complete.</p>
<p>3. Safing Supervisor/Observer: Crossed arms overhead, fists clenched.</p> 	Crossed standard RED wands held overhead.	Suspend all arming/safety operations on aircraft.	Suspended safing and await further instructions.
<p>4. Safing Supervisor: Give pilot "thumbs up."</p> 	Vertical sweep with RED banded wand.	Pilot: Aircraft is safed and crew and equipment are clear.	Pilot: Acknowledge with similar signal.

Figure 6-1-1. Aircraft Arming and Safing Signals (Cont'd)

Standard Signals Wands			
Personnel	Color	No.	Type
Ordnance Arming Crew	RED	1	Stubby Banded*
Ordnance Arming/ Safety Supervisor	RED	2	Standard Banded**
<p>*One 3/4-inch band on the cone (plastic electricians tape is recommended)</p> <p>**Two 3/4-inch bands spaced equidistant on the cone (plastic electricians tape is recommended)</p>			

Figure 6-1-2. Standard Signal Wands

6.1.6 Explosive Mishap Investigations and Reporting.

There is a high potential for mishaps involving explosives. Accordingly, requirements for reporting explosive mishaps are more stringent than for other kinds of accidents and incidents. All accidents, incidents, or malfunctions involving nonnuclear explosives, explosive ordnance, chemical agents, and ordnance materials shall be reported. Explosive mishap reports are to be submitted in accordance with Volume I Chapter 4.6 and OPNAVINST 5102.1C.

6.1.7 Arms, Ammunition, and Explosives Security

6.1.7.1 Emphasis on Arms, Ammunition, and Explosives (AA&E) security has greatly increased in the last few years. Better locks, detection devices, materials, and training have been provided and new improvements are continuing to be developed; however, "the human factor" continues to be the weak link. The most effective single action is conscientious supervision.

6.1.7.2 The Commander, Naval Ordnance Center (N72) manages the overall AA&E security program. OPNAVINST 5530.13B Dept. of the Navy Physical Security Instruction for Conventional Arms, Ammunition and Explosives (AA&E) (Navy Security Instruction for Conventional AA&E) (NOTAL) provides guidance for implementation and operation of an individual command's AA&E security program.

6.1.7.3 The security officer is the designated representative of the commanding officer responsible for planning, implementing, enforcing, and supervising the physical security and loss prevention programs of the command.

6.1.8 Physical Security and Loss Prevention Program.

The physical security and loss prevention program is part of the overall security program at an activity. The physical security portion of the program is concerned with means and measures designed to safeguard personnel and protect property by preventing, detecting, and confronting acts of unauthorized access, espionage, sabotage, wrongful destruction, malicious damage, theft, pilferage, and other acts which would reduce to some degree the capability of the activity to perform its mission. Loss prevention is particularly concerned with preventing loss of supplies, tools, equipment, or other materials in use, storage, transit, and during the issue process. Concern is not only focused on the threat of criminal activity and acts of wrongdoing by forces external to the organizational unit, it is also specifically directed toward internal causes: theft and pilferage by those who have unauthorized access; inattention to physical security practices and procedures, and disregard for property controls and accountability. Physical security and loss prevention measures include instructions, procedures, plans, policies, agreements, systems, and resources committed and designed to

safeguard personnel, protect property, and prevent losses, thereby enhancing readiness. OPNAVINST 5530.14C (Physical Security and Loss Prevention Manual) addresses physical security and loss prevention responsibilities.

6.1.9 Hazards of Electromagnetic Radiation to Ordnance, Radiation Hazards, and Emission Control

6.1.9.1 Modern radio and radar transmitting equipment produce high intensity radio frequency fields. Radio frequency fields can cause premature activation of sensitive electro-explosive devices contained in ordnance systems and biological injury to personnel working in the vicinity of these radiating elements. Sparks or arcs caused by high intensity fields are a potential ignition source for fuel-air mixtures. The most susceptible periods are when explosive devices are outside their protective stowage or packaging and subjected to high intensity radiation. The effect of premature operation of explosive devices will vary depending upon the device initiated. The most likely effects are duds, loss of reliability, or in the case of rockets and flares, ignition of the propellant or illuminant. There is a low but finite possibility of warhead detonation. Therefore, it is necessary to positively control the electromagnetic radiation in areas where Hazards of Electromagnetic Radiation to Ordnance (HERO)-susceptible ordnance is being handled. A HERO or Radiation Hazard (RADHAZ) analysis shall be conducted at each activity to determine possible adverse interactions between transmitting devices and ordnance systems. Measurements shall be made in stowage areas, assembly areas, ordnance work areas, and all routes where ordnance will be handled.

6.1.9.2 Each activity shall prepare or have in effect a HERO and Emission Control (EMCON) instruction delineating local HERO requirements and responsibilities. NAVSEA OP 3565/NAVAIR 16-1-529 (Electromagnetic Radiation Hazards to Ordnance, Personnel, Fuel, and Other Flammable Materials) prescribes detailed operating procedures and safety precautions which should be included in the command's HERO instruction. All personnel who handle or work in close proximity to HERO-susceptible materials will thoroughly familiarize themselves with the contents of NAVSEA OP 3565/NAVAIR 16-1-529.

6.1.9.3 Prior to commencing operations involving HERO-susceptible ordnance, personnel in charge shall ensure that the proper HERO and EMCON condition has been set and that appropriate and timely notification has been made to all concerned.

6.1.9.4 The operations officer should review the command's HERO posture once every 5 years, or in the event there are major changes in the electronics suite, ordnance complement or handling procedures. Activities requiring information regarding their HERO/RADHAZ program or

posture should contact the Naval Surface Warfare Center, Dahlgren, VA.

6.1.10 Adverse Meteorological Disturbances. Lightning, high winds, precipitation, and thunderstorms are atmospheric disturbances that have a varied impact on the safe handling of ordnance. It is incumbent upon the commanding officer to use prudent judgment in deciding to continue handling explosives when adverse environmental disturbances exist. When severe weather phenomena are forecast, security of ordnance shall take priority over all other storm preparation as delineated in the facilities severe weather bill.

6.1.11 Explosives Drivers

6.1.11.1 Operators of self-propelled vehicles and equipment (except weapons loaders) carrying explosives shall be trained and qualified as explosives drivers in accordance with SW020-AF-ABK-010 (Driver's Handbook, Ammunition, Explosives, and Dangerous Materials) and will also be qualified and certified in the handling and movement of the family of explosives involved in accordance with OPNAVINST 8020.14/MCO 8020.11 (NOTAL) or MCO 8023.3 (NOTAL) and applicable type commander instructions.

6.1.11.2 Explosives drivers must meet the following minimum standards:

- a. Be properly trained.
- b. Be 18 years of age or older to operate motor vehicles transporting Hazardous Material on-station, explosives drivers shall be 21 years of age or over for off-station operations (except in the event of a national emergency).
- c. Possess a valid state operator's permit.
- d. Possess a U.S. Government motor vehicle operator's identification card (Standard Form OF346) with authorized equipment and the words "EXPLOSIVES DRIVER" inscribed on the reverse side.
- e. Possess a current medical examiner's certificate.

6.1.11.3 Operators of material handling equipment and weapons loaders shall be properly trained and are exempt from Standard Form 46 and state operators license requirements provided they have a valid ground support equipment operator's license for each specific type equipment they are authorized to operate.

6.1.12 Explosive Ordnance Disposal

6.1.12.1 The Explosive Ordnance Disposal (EOD) detachment serves as the principal advisor to the weapons officer

on safety precautions and procedures to be followed in rendering safe explosives which may constitute a hazard to the command.

6.1.12.2 Mission. The mission of the Navy EOD group/unit/detachment is to provide the Department of the Navy with the capability for surface and underwater detection, identification, render safe, recovery, field and laboratory evaluation, and disposal of explosive ordnance which has been fired, dropped, launched, or placed in such a manner as to constitute a hazard to operation, installation, personnel, or material. The mission includes render safe and/or disposal of any ordnance items which have inadvertently become hazardous by damage or deterioration when the disposal of such items is beyond the capabilities of personnel normally assigned the responsibility for routine disposition. Refer to OPNAVINST 8027.6E for the mission and tasks of the EOD.

6.1.12.3 Prior to deployment, EOD services and support shall be requested in accordance with applicable fleet commander in chief directives and type commander instructions.

6.1.13 Explosives Safety Waivers/Exemptions

6.1.13.1 If operational commitments necessitate deviation from prescribed ammunition stowage and handling regulations, a waiver or exemption shall be requested in accordance with OPNAVINST 8020.14/MCO P8020.11 (NOTAL). Approval of this waiver or exemption must be received prior to deviating from established regulations. The following paragraphs excerpted from OPNAVINST 8020.14/MCO P8020.11 (NOTAL) have been amplified to facilitate the waiver/deviation request procedures. For more detailed information, refer to the basic instruction.

6.1.13.2 Definitions

a. Deviations. A departure from an established explosives safety rule or standard. For explosive safety applications, a deviation authorized by the Chief of Naval Operations (CNO) is considered to be a departure from Navy or Department of Defense criteria, but under strictly controlled and regulated conditions based upon compelling operational need.

b. Waiver. A deviation from mandatory explosive safety requirements approved for the purpose of temporary satisfaction of recurring readiness or operational requirements. A waiver is issued pending the completion of corrective measures, generally for a maximum of two years.

c. Event Waiver. A deviation approved on a case basis for a particular evolution, issued for a limited period to meet a specific, nonrecurring readiness or operational requirement which cannot be satisfied otherwise.

d. **Exemption.** A deviation from mandatory explosive safety requirements approved for the purpose of long-term satisfaction of recurring readiness or operational requirements. Exemptions are generally issued for a maximum of 5 years, but will not be granted for a period in excess of that estimated for correction of the deficiency.

e. **Operational Necessity.** A situation of such compelling urgency that failure to grant a deviation from established safety criteria will have a deleterious impact on mission readiness.

6.1.13.3 Explosives Safety Waiver/Exemption Submission. Commands identifying an urgent need for a waiver/exemption shall submit a request to CNO (N411) in accordance with the procedures and formats prescribed in OPNAVINST 8020.14/MCO P8020.11 (NOTAL).

6.1.14 Conventional Weapons Safety Assistance Teams. There are two conventional weapons safety assistance teams; one is assigned to the Pacific Fleet and one to the Atlantic Fleet. These teams are composed of specially trained, experienced ordnancemen who provide assistance to fleet activities in all areas of conventional ordnance handling, stowage, and safety. The teams are available to make visits to commands during periods of extensive explosive evolutions and predeployment training involving ordnance and other periods. Their assistance may be requested by individual units requiring or desiring assistance in any operational or training ordnance evolution. See COMNAV-AIRPACINST 8020.3 (NOTAL).

6.1.15 Static Displays

6.1.15.1 The use of live ordnance for purposes such as training, museum display, demonstrations, public functions,

patriotic occasions or otherwise, is prohibited. Ordnance items used for such purposes shall be inserted in accordance with the activity standard operating procedure and shall be performed by personnel certified in accordance with OPNAVINST 8020.14/MCO P8020.11 (NOTAL). Marine Corps activities shall comply with the additional requirements of MCO 3571.2F, MCO 1510.78F, and MCOP8011.4F. Activities shall maintain a record of all ammunition currently held by the activity, and that ammunition which has been certified inert. Inert ammunition is identified by a DODIC/NALC and NSN. In addition, some inert ammunition is identified by a serial number on the item. For additional requirements on identification of inert ammunition, see NAVSEA OP 5, Vol. 1, Sixth Revision. (See figure 2-1 NAVSEA OP 5, Vol. 1, Sixth Revision).

6.1.15.2 Inert ordnance on display shall be afforded the same security as is required for live ordnance. It shall be under constant observation to prevent tampering or loss.

6.1.15.3 Prior to permitting public access to the interior of aircraft on static display, all pyrotechnic devices which may be hazardous to the general public shall be removed.

6.1.16 Working Parties. Personnel whose sole contact with explosives occurs when assigned to a working party for the purpose of handling explosives are exempt from the requirement of the ordnance handling qualification and certification program. However, they shall be thoroughly indoctrinated in the safety precautions relating to the type ordnance they will be handling. Supervisors of these personnel shall be qualified and certified at the individual or team leader level in accordance with OPNAVINST 8020.14/MCO P8020.11 (NOTAL) or MCO 8023.3 (NOTAL) and applicable type commander instructions.

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CHAPTER 6.2

Conventional Weapons Handling Procedures Ashore

6.2.1 General. This chapter provides general and specific information for the safe and efficient handling, transportation, and stowage of ammunition and explosives ashore. The regulations and safety precautions set forth herein do not change or modify existing directives, nor do they relieve cognizant personnel of their responsibility for the use of good judgment and observance of safety precautions. The rules and regulations contained in this chapter are based in whole or in part on the bibliography listed in figure 6-2-1. For expanded or detailed procedures, reference should be made to those directives.

6.2.2 Responsibilities. Duties and responsibilities of authoritative personnel concerned with the handling of explosives at shore activities are delineated in chapter 1 of NAVAIR 00-80T-103 (Naval Air Training and Operating Procedures Standardization (NATOPS) Conventional Weapons Handling Procedures Manual (Ashore)) and in volume II, chapter 6.1.

6.2.3 Ammunition Allowances

6.2.3.1 The Load Plan/Load Planning is authorized and maintained by authority of OPNAVINST 8010.12F (NOTAL). It contains the latest revision of the applicable station's mission statement. Each Navy and Marine Corps station which stocks and stores ammunition to support its stated mission has an Load Plan/Load Planning prepared by the Naval Sea Systems Command. Only the weapons officer is authorized to requisition and turn in ammunition in support of Load Plan/Load Planning and other training allowances. The weapons officer is responsible for maintaining Load Plan/Load Planning allowances or letters of waiver from the applicable authority.

6.2.3.2 Special purpose ammunition other than that authorized by Load Plan/Load Planning may be stocked with the approval of type commanders.

6.2.3.3 The weapons officer shall request modifications to Load Plan/Load Planning consistent with stowage capabilities, usage rates, and annual training ammunition allowances.

6.2.4 Ammunition Accountability and Management

6.2.4.1 The policy, procedures, and responsibilities for management of conventional ammunition as promulgated in NAVSUP P-724 (NOTAL) shall be adhered to.

6.2.4.2 The weapons officer shall maintain a stock record for all conventional ammunition in the station's custody, utilizing an established uniform ammunition stock recording procedure for mechanized and non-mechanized activities. Mechanized activities are all TIR stock points with the Ordnance Management System (OMS) and ATR activities with the Fleet Optical Scanning Ammunition Marking System (FOSAMS) which have approved automated inventory records.

6.2.4.3 Non-mechanized activities shall maintain ammunition stock record cards. There are three forms available for ammunition stock recording. An Ammunition Master stock Record Card (NAVSUP 1296) and either a Lot/Location Card (NAVSUP 1297) or a Serial/Location supplemental card (NAVSUP 1356) will be maintained for every Naval Ammunition Logistics Code (NALC) carried on board. Lot/location or serial/location supplemental cards should be placed with the appropriate master stock record card. Another supplemental master stock record card by National Item Identification Number (NIIN) will be used if a second NIIN is received. All entries should be posted promptly and in ball point pen. When transferring to a new stock record card, the existing stock record card will be retained for audit purposes.

6.2.4.4 The weapons officer shall maintain a Notice of Ammunition Reclassification (NAR) file in accordance with NAVSUP P-801 (NOTAL) and ensure that all ammunition carried on the master stock records is properly coded and identified.

6.2.4.5 All departments and tenant commands shall return unserviceable ammunition, and any other ammunition not required or authorized, to the weapons officer for further disposition. The weapons officer shall manage the ammunition disposition program in accordance with NAVSUP P-724 (NOTAL).

NAVAIR PUBLICATIONS	
NAVAIR 00-80R-14	USN Firefighting and Rescue Manual
NAVAIR 01-700	Publication Index on Airborne Weapons Stores
NAVAIR 01-AIM9-2	MIM AIM-9 Series SIDEWINDER
NAVAIR 01-AIM54-2-3	MIM AIM-54A PHOENIX
NAVAIR 01-1A-75	ALM Consumable Material Application for Cleaning and Corrosion Control
NAVAIR 01-265GMAD-9-3.12	MIM AIM-7 Series SPARROW
NAVAIR 01-AGM84A-2-1	MIM AGM-84 HARPOON/SLAM
NAVAIR 01-15MGD-1	Laser Guided Bomb (LGB-2)
NAVAIR 01-90TBA-1	AQM-37A Target (0)
NAVAIR 01-90TBA-3	AQM-37A Target (1)
NAVAIR 11-1-113	Safety Precautions for Liquid Fuel
NAVAIR 11-1-116B	Navy Ammunition Logistic Codes (also issued as TW 010-AA-ORD-030)
NAVAIR 11-1F-2	Airborne Bomb and Rocket Fuze Manual
NAVAIR 11-5A-17	Bombs and Associated Components
NAVAIR11-5A-37	JDAM
NAVAIR 11-15-7	Pyrotechnic Screening and Marking Devices
NAVAIR 11-155UU-44/A1	SUU-44 Flare Dispenser
NAVAIR 11-75-63	Launchers, Single Bay LMU-23/E and Power Bay LMU-24E for Smokey Sam
NAVAIR 11-75A-44	SUU-44 Flare Dispenser
NAVAIR 11-75A-61	2.75-inch Airborne Rocket Launchers (LAU-61/68 Series)
NAVAIR 11-75A-63	5.00-inch Rocket Launchers (LAU-10 Series)
NAVAIR 11-75ADU475-1	ADU-475/E GM Adapter
NAVAIR 11-85-1	Propellant Actuated Devices (PADs)
NAVAIR 11-85-5	Airborne Rockets
NAVAIR 11-85M-2	Rocket Motors (JATO)
NAVAIR 11-95-1	M61A1 Gun System
NAVAIR 11-100-1	Cartridges and Cartridge Actuated Devices
NAVAIR 11-120A-1.1	Weapons Packaging, Handling, Stowage
NAVAIR 11-120A-1.2	Weapons Packaging, Handling, Stowage
NAVAIR 11-140-5	Airborne Weapons Assembly Manual, Bombs, Firebombs and Practice Bombs
NAVAIR 11-140-6.1	Airborne Weapons Assembly Manual, Air-to-Air Tactical Missiles
NAVAIR 11-140-1	Rapid Rearm Manual
NAVAIR 11-140-6.2	Airborne Weapons Assembly Manual, Air-to-Ground Tactical Missiles
NAVAIR 11-140-6.3	Airborne Weapons Assembly Manual, Training Missiles
NAVAIR 11-140-10	Airborne Weapons Assembly Manual, LGBs / GBUs
NAVAIR 11-140-9	Airborne Weapons Assembly Manual, CBU
NAVAIR 11-140-24	Ordnance Handling Equipment
NAVAIR 16-1-529	RADHAZ HERO Manual (also issued as OP 3565)
NAVAIR 19-15BC-10	Aero 39 Bomb Skid Adapter
NAVAIR 19-15BC-12	Aero 12C Weapons Skid
NAVAIR 19-15BC-13	Aero 21A Weapons Skid
NAVAIR 19-15BC-18	A/M32K5 Munitions Set w/Adapters
NAVAIR 19-15BC-505	Aero 21 Weapons Skid

Figure 6-2-1. Bibliography of Applicable References

NAVAIR PUBLICATIONS

NAVAIR 19-15BD-2	Aero 67A Munitions Transporter
NAVAIR 19-25E-51	Aero 51 Weapons Trailer
NAVAIR 19-25E-61	MHU-126 Weapons Trailer
NAVAIR 19-25E-63	MHU-151/M Munitions Trailer
NAVAIR 19-95-1	Weapons Handling Equipment Configuration Guide
NAVAIR 19-100-1.1	Approved Ordnance Handling Equipment

NAVAIR Directives

NAVAIR 19-600-63.6-1/-4	PMS/Preop Aero 51 Bomb Trailer
NAVAIR 19-600-66-6-2	PMS/Aero 47A Loader w/Adapters
NAVAIR 19-600-75-6-1/-4	PMS/Preop Aero 21 Skid w/Adapters
NAVAIR 19-600-86-6-2	PMS A/S 32K-1A/B Loader w/Adapters
NAVAIR 19-600-101-6-1/-4	PMS/Preop MK 7 Bomb Trailer
NAVAIR 19-600-145-6-1/-2	PMS/Preop Munitions Set A/M32K-5
NAVAIR 19-600-148-6-1/-2	PMS/Preop LALS
NAVAIR 19-600-162-6-1/-2	PMS/Preop MHU-126 Bomb Trailer
NAVAIR 19-600-169-6-1/-2	PMS/Preop Aero 61 Sting
NAVAIR 19-600-185-6-1/-2	PMS/Preop MHU-151/M Bomb Trailer
NAVAIR 19-600-186-6-1	Preop A/S32A-30 Tow Tractor
NAVAIR 19-600-189-6-1	PMS MHU-171/E Trailer
NAVAIR 19-600-198-6-1	Preop MHU-171/E Trailer
NAVAIR AW-820HN-MIB-000	MIM AGM-84 HARPOON
NAVAIRINST 4460.1D	Policy and Procedures for Air Launched Missile Repairable Material Movement

NAVSEA PUBLICATIONS

NAVSEA OP 5 Volume 1	Ammunition and Explosives Ashore
NAVSEA OP 1014	Ordnance Safety Precautions
NAVSEA OP 2173 Volumes 1 & 2	Catalog of Ordnance Handling Equipment
NAVSEA SW020-AG-SAF-010	Navy Transportation Safety Handbook
NAVSEA OP 2217	Miscellaneous Chemical Munitions
NAVSEA OP 2238	Identification of Ammunition
SW020-AF-ABK-010	Explosive Driver's Handbook
NAVSEA OP 2793	Toxic Hazards of Pyrotechnics
NAVSEA OP 3199 Volumes 1 & 2	Safety Precautions for Liquid Propellant
NAVSEA OP 3347	USN Ordnance Safety Precautions
NAVSEA OP 3565 Volumes 1 & 2	HERO Manual (also issued as NAVAIR 16-1-529)
SW023-AH-WHM-010	Handling Ammunition with MHE
SW023-AG-WHM-010	On-Station Transportation of Ammunition
NAVSEA SG420-AP-MMA-010	Testing of Ordnance Handling Equipment
NAVSEA SW020-AC-SAF-010	Transportation and Storage Data for Ammunition, Explosives and Related Hazardous Materials
NAVSUP P-802	Navy Ammunition Logistics Codes
NAVSUP P-801	Ammunition Unserviceable, Suspended
NAVSEAINST 4570.1A	Demolition and Disposal of Ammunition

Figure 6-2-1. Bibliography of Applicable References (Cont'd)

OPNAV Instructions	
OPNAVINST 3100.6G	Special Incident Reporting (OPREP-3, Navy Blue and Unit SITREP) Procedures
OPNAVINST 4790.2H	Naval Aviation Maintenance Program
OPNAVINST 5102.1C	Mishap Investigation and Reporting
OPNAVINST 5530.13B	DON Physical Security Instruction for Sensitive Conventional Arms, Ammunition and Explosives (AA&E)
OPNAVINST 8010.12F	Naval Conventional Ordnance Operational Logistics Policy
OPNAVINST 8020.14/MCO P8020.11	Department of the Navy Explosives Safety Policy
OPNAVINST 8027.6E	Naval Responsibilities for Explosive Ordnance Disposal (EOD)
SECNAV Instruction	
SECNAVINST 5000.2B	Small Arms and Weapons Management
SECNAVINST 5510.30A	DON Personnel Security Program
COMNAVAIRLANT/PAC Directives	
COMNAVAIRPACINST C8011.6C	Training Ordnance Requirements
COMNAVAIRLANTINST 8023.5H/	
COMNAVAIRPACINST 8023.2G	Conventional Aviation Ordnance Qualification and Certification Program
COMNAVAIRESFORINST 8025.1G	
NAVSUP Directives	
NAVSUP Pub 485	Naval Supply Procedures Afloat Supply Vol. I
NAVSUP Pub 505	Packaging and Handling of Dangerous Materials for Transportation by Military Aircraft
NAVSUP Pub 724	Conventional Ordnance Management Policies and Procedures
CINCLANT/CINCPACFLT Instructions	
CINCPACFLTINST 8010.12	Fleet Ammunition Requisition and Reporting Guide
CINCLANTFLTINST 8027.3F/	
CINCPACFLTINST 8027.1 M	Explosive Ordnance Disposal
NATOPS MANUALS	
00-80T-103	NATOPS Conventional Weapons Handling
00-80T-109	Aircraft Refueling NATOPS Manual

Figure 6-2-1. Bibliography of Applicable References (Cont'd)

6.2.5 Ammunition Requisition, Issue, and Return Procedures

6.2.5.1 Ammunition requests shall be delivered to the weapons department ammunition accounting section within the time frame specified in the station's ordnance handling instruction. All department heads and squadron commanding officers shall provide the weapons officer with a continually updated list, with signature specimens affixed, of all personnel authorized to sign DD 1348 requisitions for ammunition. All requests for assembled ammunition must be accompanied by a DD 1348 requisition for all major and ancillary components of the all-up-round.

6.2.5.2 Propellant Actuated Devices (PADs) requisitioning policy is described in NAVAIR 11-85-1 (NOTAL). These items are manufactured in limited quantities and are not carried as stock items. PADs requisitioning shall be handled in the following manner:

a. PADs requiring replacement during aircraft calendar inspection should be requisitioned 90 days in advance of the requirement.

b. While based ashore, and when directed by their type commander, fleet squadrons may be authorized early replacement of PADs that will expire during deployment. When PAD are requisitioned for this purpose, the remarks section of the DD 1348 shall be so annotated.

c. Requisitions for replacement of damaged PADs shall cite the applicable naval aviation maintenance discrepancy report serial number and the date time group of the message report.

6.2.5.3 Ammunition requiring assembly shall be assembled by the weapons department at the naval air station and marine aviation logistics squadron at a Marine Corps air station and issued as an all-up-round in the configuration specified on the DD 1348 requisition.

6.2.5.4 All ammunition other than all-up-rounds shall be issued in their original shipping containers or in an approved metal ammunition shipping container.

6.2.5.5 Due to the Hazards of Electromagnetic Radiation to Ordnance (HERO) considerations, chaff, decoy flares, associated impulse cartridges, and 2.75-inch and 5.00-inch rockets shall be issued only after being properly and safely loaded inside the dispenser unit.

6.2.5.6 All ammunition returned to the weapons department shall be accompanied by a properly completed DD 1348-1 (DOD single line item release/ receipt document) in its prescribed shipping container. The weapons department shall provide shipping containers when the original is not available. Containers and documents shall reflect the national stock number, naval ammunition logistics code, MK and MOD, nomenclature, lot number(s), serial numbers, and condition code.

6.2.5.7 For CADs and PADs, a DD 1577-2 (unserviceable (repairable) tag-material) shall accompany the DD 1348-1 turn in document and material. All repairable CADs and PADs shall be turned in packaged in the shipping container received with the replacement item.

6.2.5.8 The weapons department shall return to not ready-for-issue stock all ammunition returned from squadrons in condition code K (serviceable condition unknown) pending verification of actual condition code. The item(s) shall be accompanied by a properly completed DD 1348-1 indicating the known item data, the material condition code, and annotated "Gain by Fleet Return." Disposition will be requested through normal channels.

6.2.6 Armament Weapons Support Equipment. All equipment authorized for the handling of conventional weapons shall be maintained and serviced in strict accordance with existing directives. Detailed information pertaining to the handling of such equipment can be found in volume II section 8.

6.2.7 Transportation of Explosives

6.2.7.1 All vehicles used to transport ammunition and explosives on or off military installations shall have fully operable electrical and mechanical systems and be equipped with all safety equipment required by SW020-AC-SAF-010 and SW020-AF-ABK-010.

6.2.7.2 The driver of on-base, explosive-laden vehicles shall be thoroughly familiar with the applicable portions of SW020-AF-ABK-010 and SW023-AG-WHM-010.

6.2.7.3 All rules and regulations pertaining to on-station transportation of explosives shall apply for off-station movement including the following:

6.2.7.3.1 The supply officer will schedule all off-station explosive movements utilizing commercial carriers or public works department vehicles and drivers. All off-station explosive movements shall be in accordance with the following government directives:

a. DoD Regulation 5200.1-R of 1 January 1997 (NOTAL).

- b. OPNAVINST 5530.13B (NOTAL).
- c. CINCPACFLTINST 8010.12 (Pacific Fleet activities only) (NOTAL).
- d. SW020-AF-ABK-010 (NOTAL).
- e. NAVSEA SW020-AG-SAF-010 (NOTAL).
- f. NAVSUP P-724 (NOTAL).
- g. NAVSEA SW020-AC-SAF-010 (NOTAL).

6.2.7.3.2 The public works transportation officer shall ensure all vehicles provided to the supply officer and public works officer for off-station explosive movements are in fully operable condition and capable of passing inspection in accordance with DD 626 (motor vehicle inspection form).

6.2.7.3.3 Required off-station explosives movement forms shall be completed as follows:

- a. Supply Officer.
 - D DD 1907, Signature and Tally Record
 - D DD 1387-2, Special Handling Data/Certification
 - D DD 1348-1 DOD Single Line Item Release/Receipt Document
 - D Standard Form 1183, Government Bill of Lading
- b. Public Works Officer.
 - D NAVFAC 9-11240/1, Vehicle/Equipment Request and Record
 - D NAVMC 10627, Vehicle/Equipment Operational Record
- c. Weapons Officer.
 - D DD 836, Special Instructions for Motor Vehicle Drivers
 - D DD 626, Motor Vehicle Inspection
 - D DD 1387-1C, Waterproof Shipping Tag
 - D NAVSEA 8023/3, Railroad Car Inspection Report

6.2.7.3.4 For off-station shipments, the supply officer shall ensure the following directives are complied with for shipment security and documentation:

- D DoD Regulation 5200.1-R of 1 January 1997 (NOTAL)
- D DOT Exemption E-868 (NOTAL)
- D OPNAVINST 5530.13B (NOTAL)
- D Chapter 7 and table 7-3 of NAVSEA SW020-AG-SAF-010 (NOTAL)
- D NAVSUP P-803 (NOTAL)
- D NAVSUP Manual Volume V (article 52150) (NOTAL)

6.2.7.3.5 United States Navy numbered seals (NSN 9Z5340-00-084-1570) provided by the supply officer shall be used on the following Arms, Ammunition, and Explosives (AA&E):

- a. All rail and truck shipments of classified AA&E categorized as I, II, III, or IV security risk.
- b. All metal containers designed for strap-seal (missile containers).
- c. All closed compartments of vehicles when used to transport AA&E category I, II, III, or IV material.
- d. Carload and less than carload shipments of AA&E under DOT Exemption E-868.
- e. AA&E shipments to which the carrier is to be denied access.

6.2.7.3.6 When seals are applied to commercial carrier shipments, the seal numbers, seal ownership, and applying activity shall be annotated on the Government Bill of Lading and DD Form 1348-1.

6.2.7.3.7 When a shipment contains classified material, a seal tag and a seal notice shall be affixed on and near the seal.

6.2.7.3.8 When AA&E is classified CONFIDENTIAL, unit weight is over 200 pounds, and material is packaged in a container with strap seals applied, the material shall be shipped as unclassified. In addition, CONFIDENTIAL material packaged in a domestic or fleet issue unit load in accordance with MIL-STD/ WR50 series requirements shall be shipped as UNCLASSIFIED. In either case, the material may be shipped by any authorized mode.

6.2.7.3.9 Incoming sealed shipments shall be thoroughly inspected by the receiving department (weapons or supply). Seal numbers shall be compared with the DD 1348-1 and the Government Bill of Lading. If seal is intact and the numbers match, the word "INTACT" shall be annotated on the Government Bill of Lading. Refer to SW020-AC-SAF-010 for procedures to follow for discrepant shipments.

6.2.8 Magazines and Magazine Areas

6.2.8.1 All magazines and magazine areas are under the cognizance of the station weapons officer and shall be administered and maintained in accordance with NAVSEA OP 5, Volume 1 and NAVSEA SW020-AC-SAF-010 (NOTAL).

6.2.8.2 The physical security of ammunition and explosives stored in the station's magazines shall be provided for in accordance with OPNAVINST 5530.13B (NOTAL).

6.2.8.3 Ammunition storage requirements, magazine condition, and magazine area encroachment due to offbase construction shall be continually monitored to ensure that explosive safe quantity distances and storage criteria is maintained in accordance with NAVSEA OP 5 (NOTAL). Should a violation of regulations be detected, and resolution at the local level is impossible, a waiver or exemption shall be requested in accordance with OPNAVINST 8020.14/MCO P8020.11 (NOTAL).

6.2.9 Assembly and Disassembly

6.2.9.1 Due to the inherent dangers involved, the assembly and disassembly of aviation ordnance shall be closely controlled. All weapons unpacking, assembly, and disassembly shall be accomplished in accordance with NAVSEA OP 5, NAVSEA OP 3565/NAVAIR 16-1-529, the appropriate checklist, and the Naval Air Systems Command (NAVAIR-SYSCOM) technical manuals.

6.2.9.2 Assembly or disassembly of components shall be conducted only in the station's approved ordnance assembly area and shall be accomplished by properly qualified and certified weapons department personnel at naval air stations and marine aviation logistics squadron personnel at Marine Corps air stations.

6.2.9.3 The assembly and disassembly areas shall be maintained HERO safe whenever the ordnance being handled is HERO susceptible. In the event HERO-susceptible ordnance must be handled, the officer in charge of the evolution shall request the operations officer to set the appropriate HERO emission control condition prior to exposing the

HERO-susceptible ordnance to radio frequency environments.

6.2.10 Ordnance Handling and Loading Pads and Combat Aircraft Loading Areas

6.2.10.1 Ordnance handling pads and/or Combat Aircraft Loading Areas (CALA) are areas that are designed and constructed to meet the explosive safety requirements of NAVSEA OP 5 and DOD explosive safe quantity distances during the loading or downloading of high explosives on combat and cargo aircraft. A map depicting the exact location of the ordnance handling pad and/or CALA should be included in the station's air operations manual and ordnance handling instruction.

6.2.10.2 Use of the pad and/or CALA is mandatory during the loading, downloading, and rearming of aircraft carrying hazard class 1.1 and 1.2 explosives, also certain hazard class 1.3 and 1.4 explosives are required to use the pad and/or CALA.

6.2.10.3 The pad and/or CALA shall be used for all emergency safing and downloading of HERO-unsafe or HERO-susceptible ordnance and hung ordnance that cannot be adequately safed in the arming and dearming areas.

6.2.10.4 Rules and regulations pertaining to the operation and scheduling of the ordnance handling pad and/or CALA shall be included in the station's ordnance handling instruction and the air operations manual.

6.2.11 Aircraft Loading and Downloading

6.2.11.1 All aircraft loading and downloading will be conducted by qualified, certified personnel in accordance with OPNAVINST 8020.14/MCO P8020.11 (NOTAL) or MCO 8023.3 (NOTAL) and applicable type commander instructions utilizing the appropriate NAVAIRSYSCOM conventional weapons and stores loading manual and checklist. Loading information contained in these manuals and checklists shall not be construed as authority to load any weapon or store for flight. The appropriate aircraft tactical manual shall be consulted for the authorized loading configuration of any weapon, store, or combination. More detailed information and safety regulations regarding the handling of explosives and loading of aircraft with ordnance at shore activities can be found in NAVAIR 00-80T-103 (NATOPS Conventional Weapons Handling Procedures Manual Ashore).

6.2.11.2 The primary area for loading and downloading explosives and other hazardous material is the ordnance handling pad.

6.2.11.3 All explosive and ammunition loading or down-loading from aircraft shall be accomplished in strict accordance with the appropriate loading manual. Aircraft loaded with ammunition must meet the quantity and distance separation requirements specified in the appropriate NATOPS manual.

6.2.12 Aircraft Arming and Darming

6.2.12.1 All aviation ordnance capable air stations shall have designated arming or dearming areas, normally near the ends of runways. Maps showing the location of such areas should be included in the station's air operations manual and ordnance handling instruction.

6.2.12.2 All aircraft, ordnance, and weapons will be armed, safed, and dearmed in compliance with the NAVAIR-SYSCOM weapons loading checklist. Tasks to be performed in the checklist "rearm" area may be accomplished in the designated loading areas or in the rearming areas. All tasks to be performed in the "arming" area shall be conducted only in the designated arming areas. If a conflict exists between this instruction and the applicable NATOPS, then the NATOPS manual shall govern and the discrepancy reported to CNO (N781) using the procedures established in volume I chapter 1.1.

6.2.12.3 Arming and dearming shall be conducted only while the aircraft is at a complete stop and control of that aircraft has been turned over to the arming and dearming supervisor. Arming and dearming hand signals shall be in accordance with the NATOPS Conventional Weapons Handling Procedures Manual Ashore and figure 6-1-1.

6.2.13 Maintenance On Loaded Aircraft

6.2.13.1 Loaded aircraft shall be construed to mean aircraft with any explosive, propellant, or pyrotechnic device on board regardless of purpose or intended use.

6.2.13.2 Per NAVSEA OP 3347, Second Revision, any equipment normally containing explosives or explosive devices shall have the explosives or explosive devices removed prior to commencing maintenance on that system, and certified in writing. Certification for aircraft may be accomplished by use of the Visual Information Display System/Maintenance Action Form. Although maintenance on loaded aircraft is prohibited, minor maintenance and routine servicing necessary to ready the aircraft for the next launch may be conducted after all weapons have been safed to the maximum degree as specified in the NAVAIRSYSCOM weapon and stores loading checklists with the following restrictions:

a. Maintenance requiring application of electrical power to the armament or weapons release and control circuitry shall not be performed.

b. Aircraft requiring extensive troubleshooting, engine removal, or complete jacking are not considered readily available for flight and shall be downloaded.

c. Freshwater washdown of aircraft carrying any type weapon (including captive carry) is prohibited until download is complete.

6.2.13.3 After a "WARNING" placard or control stick cover is prominently displayed in the cockpit, the maintenance or servicing of loaded aircraft which requires application of electrical power is limited to:

a. Refueling by fuel truck only.

b. Replacement and checkout of communications or navigation equipment.

c. Replacement or checkout of engine performance and flight instruments.

d. Engine low power turn up.

e. Flight control and hydraulic system checks.

6.2.14 Nose Dock and Hangared Aircraft

6.2.14.1 No explosive devices shall be allowed to remain on board aircraft which are hangared in nose docks or other maintenance or shelter facilities ashore except as follows:

a. Emergency egress systems and classified equipment destructors.

b. Pylon explosive bolts in F-4 type aircraft.

c. Ejection rack separation cartridges when fuel tanks are installed (BRU-9/10/11).

d. MK 64 signals, underwater sound loaded in patrol or antisubmarine warfare aircraft in designated storage racks.

e. Fire extinguisher cartridges installed in aircraft (exempt from safing requirements).

f. All other cartridges shall be removed prior to parking aircraft in these facilities.

6.2.14.2 In all cases, safety precautions for installed items shall be strictly adhered to; safety pins installed and car-

tridges electrically disconnected or mechanically locked to prevent the possibility of inadvertent firing. When maintenance is to be performed on an aircraft and the possibility of firing these items exists, in no case shall they be left in or on the aircraft.

6.2.14.3 Under conditions of war or extreme emergency, these requirements may be modified as necessary with the concurrence of the commanding officer. This may include ready alert aircraft during times of adverse weather. Safety precautions commensurate with the objective to be accomplished must be observed at all times.

6.2.15 Aircraft Fueling and Defueling

6.2.15.1 Simultaneous fueling and loading or downloading of weapons is strictly prohibited.

6.2.15.2 Fueling of explosive-loaded aircraft with fuel trucks is authorized on the flight line or ordnance handling pad, provided the stores are properly safed in accordance with the applicable aircraft weapon and stores loading manual and checklist.

6.2.15.3 Hot refueling of explosive-loaded combat aircraft to be accomplished in accordance with NATOPS Conventional Weapons Handling Manual 00-80T-103 (NOTAL) and Aircraft Refueling NATOPS Manual 00-80T-109 (NOTAL).

6.2.15.4 Hot refueling of aircraft with the following unexpended aircraft stores is authorized, providing they have been safed and dearmed in accordance with the aircraft weapons and stores loading manual or checklist.

- a. M61A1 gun systems loaded only with target practice ammunition, providing the gun is not jammed.
- b. Unexpended MK 80 series, MK 76 and MK 106, or other practice bombs with flash or impact signals.
- c. Captive carry missiles without live warheads and motors.
- d. Unexpended dummy ordnance.
- e. Internally carried unexpended pyrotechnics and signals, underwater sound.
- f. Unexpended chaff and impulse cartridges in ALE series dispensers.

6.2.16 Hung and Unexpended Ordnance

6.2.16.1 Hung ordnance is any airborne weapon which could not be dropped or fired due to a weapon, rack, or circuit malfunction. Unexpended ordnance is any airborne weapon that has not been subjected to attempts to fire or drop and is presumed to be in normal operating condition and can be fired or jettisoned if necessary.

6.2.16.2 All aircraft returning to base with hung or unexpended ordnance shall be dearmed in accordance with the applicable NAVAIRSYSCOM weapons and stores loading manual and checklist. After safing, hung free-fall and forward-firing ordnance may be downloaded in the designated area. Refer to the air operations manual and the ordnance handling instruction.

6.2.16.3 Aircraft returning with forward-firing hung ordnance that cannot be safed or dearmed in accordance with the NAVAIRSYSCOM loading checklist shall be shut down in the arming and dearming area. The weapons officer shall be notified and the aircraft downloaded in place. Hung free-fall weapons that cannot be safed or dearmed shall be downloaded at the ordnance handling pad after engine shutdown.

6.2.16.4 Aircraft with hung ordnance shall not conduct touch-and-go or field carrier landing practice. All landings shall be full stop only.

6.2.16.5 Aircraft with externally carried unexpended ordnance shall not perform touch-and-go or field carrier landing practice training when the flight path of the aircraft in the landing pattern is over any inhabited area. When the flight path is over uninhabited areas, touch and go or field carrier landing practice may be conducted with unexpended practice ordnance or captive carry missiles only.

6.2.17 Divert and Transit Aircraft

6.2.17.1 The station's commanding officer shall establish and maintain a crew of personnel qualified and certified to arm and dearm diverted aircraft.

6.2.17.2 Transit aircraft or aircraft diverting from another base or ship due to weather or aircraft emergency shall be challenged by the tower controller or operator who first makes radio contact as to the specific type of ordnance on board. Once the type ordnance has been determined, the station's assigned divert aircraft arming and dearming personnel shall be notified.

6.2.17.3 After dearming, divert or transit aircraft may be parked in the designated loading area as specified in local instructions. If downloading is required, it shall be conducted in the designated loading and downloading area.

6.2.17.4 If downloading cannot be accomplished, a security watch shall be posted until aircraft departure.

6.2.17.5 In the event an aircraft loaded with unfamiliar ordnance diverts into a facility and qualified personnel are not available for dearming, the aircraft shall be shut down and retained in the dearming area until it has been dearmed or until its departure.

6.2.17.6 Maintenance and servicing of loaded divert or transit aircraft shall be in accordance with paragraphs 6.2.13, 6.2.14, and 6.2.15.

6.2.18 Cargo Aircraft

6.2.18.1 Prior to loading or unloading ammunition, explosives, and other hazardous materials, the aircraft shall be grounded.

6.2.18.2 Loading and unloading shall be done in accordance with explosive safe quantity distance requirements specified by NAVSEA OP 5, volume 1.

6.2.18.3 If the aircraft carrying explosives and hazardous material requires only minor repairs, the cargo need not be unloaded but repairs shall be accomplished at a location which complies with appropriate explosive safe quantity distance requirements for the cargo aircraft. For major repairs, the plane shall be unloaded and the cargo stored in accordance with NAVSEA OP 5. If a landing is made for refueling purposes only, the cargo need not be unloaded. Refueling shall be accomplished at a location suitable for the performance of minor repairs as described above. A fire truck shall stand by during handling evolutions.

6.2.18.4 Prior to aircraft taxi or landing, the pilot shall contact the tower and make known the contents of the cargo

and shall request any specific instructions and priority for the aircraft.

6.2.18.5 The crash crews and firefighting personnel shall be notified as to the type of explosives or hazardous materials aboard prior to taxi or landing.

6.2.18.6 Cargo aircraft loaded with explosives shall proceed to and from the duty runway by a route that affords the greatest practical separation from inhabited buildings, combat aircraft parking areas, and explosive storage areas. No stops shall be made in proceeding to and from the duty runway except as necessary for safe ground operation of the aircraft.

6.2.19 Aircraft Grounding

6.2.19.1 During aircraft (combat, cargo, rotary, and fixed wing) explosive loading or downloading, fueling or defueling operations, the aircraft shall be grounded. An aircraft ground is any ground in which the resistance between the aircraft structure and ground is 10,000 ohms or less. The resistance value of an aircraft ground strap must not exceed 10 ohms. Ground straps must have an impedance check annually, be serialized, and a record maintained on ground strap resistance.

6.2.19.2 Aircraft grounding points shall be identified and marked as shown in figure 6-2-2. The ground system shall be visually checked frequently and at least semiannually to ensure that the connections are secure and free from paint, corrosion, or foreign materials which might impair the efficiency of the system.

6.2.19.3 Aircraft grounding systems shall be tested for electrical resistance and continuity in accordance with NAVSEA OP 5, volume 1, and MIL-HDBK-274(AS) (Electrical Grounding for Aircraft Safety) (NOTAL).

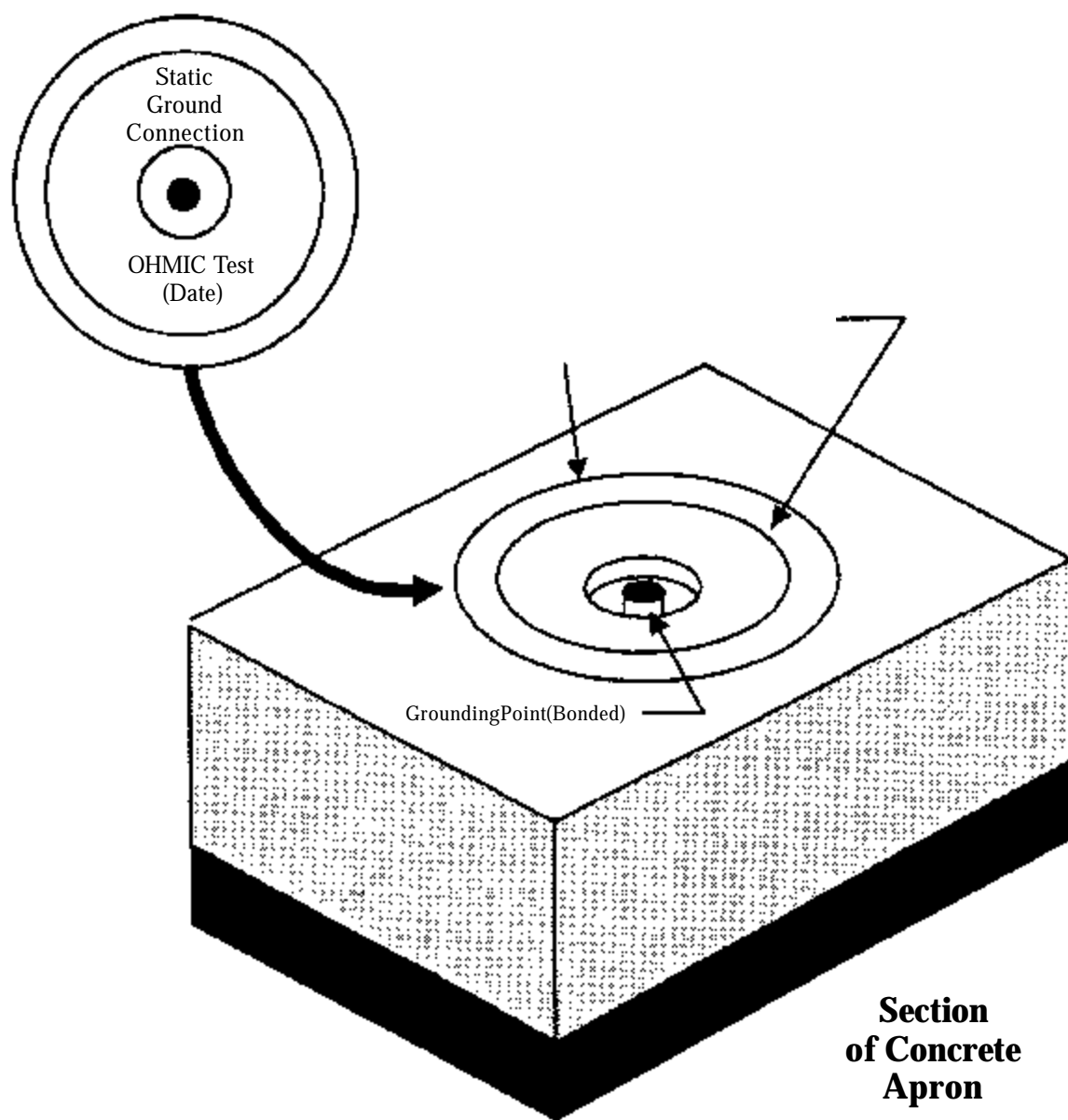


Figure 6-2-2. Aircraft Grounding Points

CHAPTER 6.3**Conventional Weapons Handling Procedures Afloat
(LHA, LHD, and LPD)****Table of Contents**

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CHAPTER 6.3

Conventional Weapons Handling Procedures Afloat (LHA, LHD, and LPD)

6.3.1 General

6.3.1.1 Amphibious assault and transport dock ships are tasked to support a wide range of aviation-related ordnance functions attendant to Marine Corps strike warfare and amphibious assault operations. Tasks include the full range of ordnance support for attack helicopters, vertical and short takeoff and landing aircraft ordnance operations, service of utility and cargo helicopter defensive weapon systems, and support of aircraft electronic countermeasure systems.

6.3.1.2 The prerequisites for safe and successful aviation ordnance evolutions aboard LHA, LHD, and LPD class ships requires careful planning and execution from stowage to launch and recovery. This chapter provides information that will aid in the standardization of procedures which provide guidance for personnel involved in the requisitioning, receipt, strikedown, stowage, breakout, assembly, strikeup, staging, and loading of air launched weapons on amphibious aviation and air-capable ships.

6.3.2 Responsibilities

6.3.2.1 Commanding officers shall ensure that all squadron and ships' ordnance personnel are properly indoctrinated in the safe and proper methods of handling and securing explosive ordnance carried by their ships. Commanding officers shall also ensure that:

a. All personnel handling ordnance are trained, qualified, and certified in accordance with OPNAVINST 8020.14/MCO P8020.11 (NOTAL) or MCO 8023.3 (NOTAL) and applicable type commander instructions.

b. All ammunition is secured in accordance with guidance set forth in NAVSEA SG420-B5-WHS-101, NAVSEA OP 4550, and NAVSEA OP 4.

c. Daily inspections of all ammunition magazines are conducted in accordance with NAVSEA OP 4 and applicable preventive maintenance system maintenance requirement cards.

d. All weapons handling equipment is inspected and tested as per NAVSEA OP 4, NAVSEA SW023-AH-WHM-010, NAVSEA S9086-XG-STM-000/CH-700R2,

NAVSEA SG420-AP-MMA-010, NAVAIR 17-1-127, and applicable surface and aviation preventive maintenance system maintenance requirement cards.

6.3.2.2 Weapons Officer. The duties and responsibilities of the weapons officer are outlined in chapter 6.1.

6.3.2.3 Aircraft Handling Officer. In the area of ordnance handling, the aircraft handling officer is responsible for setting environmental alert and coordinating with the weapons officer and electronics officer in setting Hazards of Electromagnetic Radiation to Ordnance (HERO) and emission control conditions. Additionally, the aircraft handling officer shall ensure that all conditions or restrictions pertaining to the movement or handling of explosive-loaded aircraft are strictly adhered to and are in accordance with NAVAIR 00-80T-106.

6.3.2.4 Air Combat Element. Unit commanders are responsible for initiating, maintaining, and monitoring dynamic weapons handling, loading, downloading, arming, and dearming procedures within their units. Unit ordnance officers, working in conjunction with the weapons officer, shall determine the time of delivery and the types and quantities of aviation ordnance material to be delivered to the aircraft loading areas.

6.3.3 Relevant Publications. The rules and regulations contained in this chapter are based in whole or in part on the publications listed in volume IV, appendix K. For expanded or detailed guidance in all facets of ordnance handling aboard amphibious ships, refer to these publications.

6.3.4 Training

6.3.4.1 Numerous formal schools are available for training of shipboard and squadron aviation ordnance personnel. Although designed specifically for CV and CVN aviation ordnance personnel, the following course shall be used as indicated for aviation ordnance men assigned to amphibious ships:

a. Aviation Flight Deck Safety Course (C-646-4101). This course is mandatory for all aviation ordnance personnel assigned duties on the flight deck during normal flight operations including Vertical Replenishment (VERTREP).

b. CV/CVN Air Launched Weapons Supervisor, course number C-646-4108, and CV/CVN Air Launched Ordnance (basic) course number C-646-3104, are 12-day courses that provide ordnance personnel with a thorough knowledge of the procedures and safety precautions relating to air launched weapons handling, storage, and assembly.

c. Ammunition Administration Course (J-041-0103). At least one enlisted aviation ordnanceman or gunners mate and one officer responsible for the requisitioning and accounting of the ship's mission load allowance, shipfill ammunition allowance, and LFORM class V (W) ammunition (landing force operational reserve material) shall attend this course.

d. Air Launched Guided Missile Intermediate Maintenance Course (C-122-3111). At least one aviation ordnanceman, E-5 or above, whose primary duties include the supervision of fleet intermediate maintenance on air launched missiles shall attend this course.

e. Strike Armament Equipment Intermediate Maintenance Repair (C-646-3118). Aviation ordnancemen assigned to the Aircraft Intermediate Maintenance Department shall attend this course. Course includes training on aircraft armament equipment, operational checkout procedures, corrosion control, troubleshooting procedures, periodic maintenance procedures, component removal, repair, replacement procedures, use of special tools and test equipment, use of publications, and use of safety and administrative procedures applicable to aircraft armament equipment items.

f. Magazine Sprinkler Systems Operations Maintenance and Repair (K-041-2048). Includes classroom and laboratory instruction on theory of operation, valves, thermo-pneumatic controls, and piping. During practical sessions students operate, test, isolate casualties, and repair operational classroom mock-up sprinkler systems (both wet and dry type), and repair all associated valves. Required for all personnel assigned magazine sprinkler systems maintenance duties.

g. Magazine Sprinkler Systems Inspector (K-041-2137). Is a follow-on course to qualify selected personnel attached to inspection and repair activities for conducting shipboard magazine sprinkler system inspections. Course includes recognition of deviations between installed equipment and directives, detecting incorrect maintenance actions, determining installation criteria for wet and dry type magazine sprinkler systems, thermo-pneumatic automatic controls, and inspection techniques. Practical application is conducted on mock-up trainers. Required for all personnel assigned magazine sprinkler systems inspection duties.

h. Retail Ordnance Logistics Management Systems Intermediate (J-041-2104). Students learn how to perform logistics management duties utilizing the automated, computer-based procedures of the ROLMS. Subjects include generating and maintaining ROLMS-based ammunition records relating to requisitions, receipts, reporting NAR's allowances, and other technical information required to manage Navy, Marine Corps, and other service ammunition.

i. Retail Ordnance Logistics Management Systems Operator Advanced (J-041-2105). Students learn how to perform advanced logistics management duties utilizing the automated, computer-based procedures of ROLMS. Subjects include generating and maintaining ROLMS-based ammunition records relating to requisitions, receipts, issues, expenditures, inventory management and controls, reporting, NAR's allowances, and other technical information required to manage Navy, Marine Corps, and other service ammunition.

6.3.4.2 Quotas for and information on the above listed courses can be obtained from Naval Air Maintenance Training Group Detachment quota control at NAS North Island, CA and NAS Norfolk, VA.

6.3.4.3 Training with aviation ordnance is sometimes difficult to achieve while in port. However, requisite training is available from the resident Naval Air Warfare Center Weapons Division, Point Mugu, Navy Civilian Technical Specialists at Commander, Naval Surface Force, Atlantic Fleet (COMNAVSURFLANT) and Commander, U.S. Naval Surface Force, Pacific Fleet (COMNAVSURFPAC). COMNAVSURFLANT and COMNAVSURFPAC maintain an inert class V(A) ammunition package for training and certification purposes. Information about the contents and availability can be obtained by contacting COMNAVSURFPAC, commercial or COMNAVSURFLANT. The requesting ship shall provide transportation (round trip) for the training and certification phase (inert ammunition) from either Naval Air Station North Island (west coast) or Naval Air Station Norfolk (east coast).

6.3.4.4 As discussed above for amphibious ships, other air-capable amphibious ship personnel must be prepared for and trained to meet aviation ordnance contingencies. To ensure the proper degree of safety for the protection of the ship, material, and personnel, the procedures of this chapter, NAVAIR 00-80T-106 (NOTAL), and Naval Warfare Publication (NWP) 3-04.1 (NOTAL) shall be closely followed.

6.3.4.5 Hands-on training must be used as the primary means to achieve and maintain proficiency, and ultimately to measure the readiness of the ship and embarked squadrons. Before embarkation of the squadron, ships weapons personnel must be thoroughly trained, qualified, and certified on

the handling, stowage, assembly, and strikeup or strikedown procedures for the mission load allowance ammunition. This requirement can be achieved through the formal schools listed in paragraph 6.3.4.1, a formal lecture-type training syllabus and hands-on training utilizing the inert training package described in paragraph 6.3.4.3. Realistic training scenarios with actual breakout, assembly, strikeup and strikedown will provide the commanding officer with the means to achieve the desired degree of readiness. Squadron commanders must coordinate with ships personnel in scheduling frequent loading drills and captive carry training that will exercise the ship and squadron as a team and fine tune the readiness of the amphibious task force.

6.3.5 Aviation Ordnance Safety Assessments. These assessments are conducted to determine the ship's ability to handle and store aviation ordnance and provide an opportunity to demonstrate adherence to established safety procedures. All aspects (storage spaces, assembly areas, support equipment, routes of ordnance movement, training and certification programs) of aviation ordnance handling are reviewed during the assessment and assist visit. The assessment will normally be conducted in accordance with COMNAVSURFPACINST 8023.1J (NOTAL) and COMNAVSURFLANTINST 8023.4G (NOTAL) during the ship's Pre-deployment Work-ups. COMNAVSURFPACINST 8023.1J (NOTAL) and COMNAVSURFLANTINST 8023.4G (NOTAL) are used by the assessment team during their visit and can be utilized by ship's personnel to verify the ship's aviation ordnance handling program capability.

6.3.6 Personnel Augmentation. Since there are no aviation ordnance personnel assigned to LPD class ships, augmentation will be required from the LHA and LHD as directed by the amphibious squadron commander.

6.3.7 Explosive Ordnance Disposal. Explosive Ordnance Disposal (EOD) support shall be requested by the ship in accordance with current COMNAVSURFPACINST or COMNAVSURFLANINST. EOD support shall be requested no later than 180 days prior to the scheduled deployment and no later than 60 days prior to refresher training. EOD requirements are defined in fleet commander in chief directives.

6.3.8 Ammunition Allowance and Requisitioning

6.3.8.1 For detailed information on the allowance list of landing force operational reserve material, mission load allowance, and other contingency material to be carried aboard amphibious warfare ships, refer to COMNAVSURFLANTINST 4080.1F (NOTAL), COMMARFORLANT Order 4000.10H (NOTAL), COMNAVSURFPACINST

4080.2C (NOTAL), or COMMARFORPAC Order 4080.2C (NOTAL).

6.3.8.2 For detailed information on the requisitioning of ammunition, followup procedures, and ammunition transaction report guidelines, refer to NAVSUP P-724 (NOTAL), or CINCPACFLTINST 8010.12 (NOTAL).

6.3.9 Handling and Stowage. The ordnance stowage capabilities and handling procedures aboard aviation amphibious ships vary greatly from one class to another and would require a complete and separate technical manual to adequately cover all aspects of the ordnance handling and stowage procedures for each class ship. For specific details, NAVSEA OP 4, Fifth Revision (NOTAL).

6.3.10 Weapons Replenishment

6.3.10.1 Replenishment at sea is referred to as underway replenishment and is accomplished by two basic methods: connected replenishment and vertical replenishment (VERTREP).

6.3.10.2 Connected replenishment is defined as the transfer of cargo between ships, while underway, by means of cables connected from one ship to another.

6.3.10.3 VERTREP is defined as the transfer of cargo between ships using helicopters. VERTREP is often used to supplement connected replenishment. Weapons loads, generally limited to 4,000 pounds, are transferred from the supply ship to the flight deck of the amphibious ship. The decided advantage of a VERTREP is that it can effect replenishment without ship-to-ship connection.

6.3.11 Intermediate Level Maintenance

6.3.11.1 Intermediate level maintenance aboard amphibious aviation and air-capable ships represents a primary function of the ship. Generally, it includes intermediate level testing, maintenance, and repair of all aviation support equipment.

6.3.11.2 The aircraft intermediate maintenance department provides support facilities, technical assistance, maintenance, and repair of aircraft gun systems, armament equipment, and armament systems components.

6.3.11.3 Aircraft intermediate maintenance department functions on LPD ships are limited and specific capabilities are normally regulated by the type commander.

6.3.12 Armament Weapons Support Equipment. Armament weapons support equipment used in support of ordnance handling evolutions aboard amphibious ships will be

maintained in accordance with section 5 of this instruction.

6.3.13 Assembly and Disassembly

6.3.13.1 Due to the inherent dangers involved, the assembly and disassembly of aviation ordnance shall be closely controlled. All weapons unpacking, assembly, and disassembly shall be done in accordance with NAVSEA OP 4, NAVSEA OP 3565/NAVAIR 16-1-529 (NOTAL), the appropriate checklist (NOTAL), and applicable Naval Air Systems Command (COMNAVAIRSYSCOM) technical manuals. All evolutions shall be conducted only in an approved assembly area. Refer to NAVSEA SG 420-B5-WHS-010 for designated assembly, disassembly, and staging areas on board the different class amphibious ships.

6.3.13.2 The assembly and disassembly areas shall be maintained radiation hazard free whenever the ordnance is HERO susceptible. If HERO-susceptible ordnance must be handled in a radiation hazard area, the officer in charge of the evolution shall request that the operations officer set the appropriate emission control condition prior to exposing the HERO-susceptible ordnance to a radio frequency environment.

6.3.13.3 The ship's weapons department shall maintain technical manuals for each type of ordnance material and weapons support equipment on board.

6.3.14 Aircraft Loading and Downloading

6.3.14.1 All aircraft loading and downloading evolutions shall be conducted in accordance with the applicable COMNAVAIRSYSCOM weapons loading manuals and checklists, the LHA/LHD NATOPS manual (Shipboard Helicopter Operating Procedures). Only those personnel who are qualified and certified in accordance with OPNAVINST 8020.14/MCO P8020.11 (NOTAL), and/or MCO 8023.3 (NOTAL) shall be allowed to participate in aircraft ordnance loading or downloading or other ordnance evolutions.

6.3.14.2 Compliance with weapons requirements contained in the ordnance load plan demands close coordination

between the aircraft handling officer, ship's weapons officer, squadron ordnance personnel, and the squadron maintenance liaison officer. The squadron ordnance officer is responsible for advising the squadron maintenance liaison officer as early as possible of any special requirements or considerations which apply to the loading of selected aircraft. The maintenance liaison officer shall ensure that the aircraft handling officer is apprised of any peculiarities in special requirements, configuration, or status which may render certain aircraft unassignable for particular types of weapons loads.

6.3.14.3 The aircraft handling officer shall provide squadron ordnance personnel with the planned deck spot as early as possible to afford adequate time to properly configure the aircraft and to perform release and control systems checks in accordance with the applicable COMNAVAIRSYSCOM weapons release and control checklist.

6.3.14.4 The loading and downloading of ordnance on aircraft in the high tempo environment on board air-capable ships dictates strict and absolute adherence to all prescribed safety precautions, warnings, and notices. Prior to loading and downloading ordnance on aircraft, all ordnance personnel shall be thoroughly familiar with those warnings, notes, and restrictions contained in chapter 6, paragraph 6.8.4 of NAVAIR 00-80T-106 and NAVSEA OP 3347.

6.3.15 Aircraft Arming and Dearming. Weapons arming and dearming shall be conducted only in designated areas. Arming and dearming shall be performed by qualified and certified personnel, under the direct control of an arming and dearming supervisor, utilizing the appropriate COMNAVAIRSYSCOM weapons loading checklist and the proper arming and dearming hand signals contained in the LHA, and LHD NATOPS manual and chapter 6.1.

6.3.16 Recovery of Hung and Unexpended Ordnance

6.3.16.1 Vertical and short takeoff and landing aircraft landing with hung ordnance shall be safed as soon as practical after landing. Helicopters shall be dearmed prior to installing tiedown chains.

6.3.16.1.1 Aircraft landing with unexpended ordnance shall be safed as per paragraph 6.3.15.

CHAPTER 6.4**Conventional Weapons Handling Procedures Afloat (AE, AO, and AOE)
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CHAPTER 6.4

**Conventional Weapons Handling Procedures Afloat (AE, AO, and AOE)
Combat Logistics Force Ships (Ammunition Ships)**

6.4.1 General

6.4.1.1 Three classes of ships, AE, AO, and AOE, are part of the combat logistics force which provide ordnance and ammunition logistics support to underway fleet combat forces. This interface enables fleet units to maintain their readiness posture at the desired level through a sustained period.

6.4.1.2 This chapter provides information that will aid in the safe, efficient handling of explosives and the standardization of procedures which provides guidance for ammunition ships personnel involved in pier onload and offload, stowage, movement, Underway Replenishment (UNREP), and underway combatant download.

6.4.2 Responsibilities

6.4.2.1 The first lieutenant shall:

- a. Have overall responsibility for the direction of all ammunition handling evolutions.
- b. Inform the officer of the deck when the deck department is ready for UNREP.
- c. Keep the commanding officer, executive officer, and the officer of the deck informed regarding progress and estimated time of completion of ammunition handling evolutions.
- d. Furnish qualified rig teams for all UNREP stations.

6.4.2.2 The cargo ordnance officer shall:

- a. Supervise the ammunition handling evolutions under the direction of the first lieutenant and make detailed assignments of personnel to special responsibilities during ammunition handling.
- b. Promulgate the ammunition handling notice.
- c. Ensure that safety precautions are promulgated and that all personnel involved are informed regarding proper ammunition handling techniques.

- d. Ensure the ordnance UNREP checklist (figure 6-4-1) is completed.

- e. Ensure proper stowage and security of ammunition.

- f. Direct the movement of ammunition.

- g. Estimate evolution completion times.

- h. Provide forklift drivers that are properly qualified and certified and possess explosives driver's licenses.

- i. Provide roving patrol when ammunition is staged and out of the magazine.

6.4.2.3 The supply officer shall:

- a. Ensure proper accounting and reporting of all ammunition transactions.
- b. Provide ammunition checkers at appropriate UNREP stations.
- c. Provide forklift drivers with an explosives license when requested.
- d. Ensure flexibility of meal hours is maintained to feed UNREP personnel.

6.4.2.4 The chief engineer shall:

- a. Ensure fire hoses are extended and charged in accordance with Naval Warfare Publication (NWP) 14.
- b. Ensure electric or diesel forklifts, three dimensional forklifts, and ammunition elevators are ready for use.
- c. Ensure qualified personnel are readily available to repair forklifts, charge batteries, and keep ammunition elevators in operation.
- d. Ensure electric or diesel forklifts, three dimensional forklifts, and ammunition elevators are ready for use.

ORDNANCE UNREP CHECK SHEET	
	UNREP SHIP _____ TIME/DATE _____ STATIONS _____ NUMBER OF PALLETS _____ VERTREP _____
48 HOURS PRIOR	
Plan of the day notice for work parties	_____
Identify slings required	_____
Ordnance requirements coordinated with supply and operations officer	_____
24 HOURS PRIOR	
Advise damage control assistant via chief engineer of type ammunition to be transferred or received and hose teams required.	_____
12-6 HOURS PRIOR	
Brief flight deck control	_____
Brief flight deck officer	_____
Advise air boss if VERTREP	_____
Arrange refreshments	_____
6-2 HOURS PRIOR	
Forklifts	_____
Electrics charged - Magazine on deck	_____
Diesels tested, watered, oil tested (Supply)	_____
All forklifts spotted - include flight deck assigned crew	_____
Get magazine count - stowage compatibility brief supervisors	_____
(A) Ammo flow and staging including VERTREP	_____
(B) Forklift failure procedures	_____
(C) Elevator equipment procedures	_____
2-1 HOURS PRIOR	
Handling crew	_____
Lifts belts, gloves, tools, and band cutters	_____
Forklifts staged	_____

Figure 6-4-1. Ordnance UNREP Check Sheet

e. Provide helicopter fire party during Vertical Replenishment (VERTREP).

6.4.2.5 The operations officer shall:

a. Provide UNREP planning conference briefings.

b. Ensure that electronics emission conditions meet safety requirements for ammunition UNREP in accordance with NAVSEA OP 3565/NAVAIR 16-1-529 (NOTAL) and NAVELEX 0967-LP-624-6010 (NOTAL).

6.4.2.6 The communications officer shall:

a. Provide radio and/or flag hoist communication with the customer ship during UNREP.

b. Provide hand-held walkie-talkies to appropriate stations and personnel during UNREP.

c. Secure all nonessential transmitters during ammunition UNREP.

6.4.2.7 The air officer (when embarked) shall:

a. Ensure the flight deck is ready for VERTREP.

b. Ensure the tower and flight deck are appropriately manned.

c. Ensure helicopters are ready for VERTREP.

d. Provide landing signal, chain, chock, and pale pendant hookup personnel.

6.4.2.8 The medical officer shall:

a. Be prepared to receive possible casualties.

b. Provide corpsmen as required.

6.4.2.9 The administrative division shall:

a. Provide phone talkers on the bridge.

b. Provide master-at-arms to patrol the ship during the evolution to keep nonessential personnel clear of ammunition handling areas and enforce no smoking regulations.

6.4.2.10 Safety Supervisors. Officers or senior petty officers shall be assigned as safety supervisors during UNREP evolutions at designated transfer stations.

6.4.2.11 Supervisory Petty Officer. Cargo ordnance division petty officers shall direct the flow of ammunition and ensure proper stowage and securing of ammunition and handling equipment.

6.4.2.12 Ammunition roving watch shall check for the following:

a. Unauthorized smoking.

b. Personnel tampering with staged ammunition.

c. Proper fire hoses are charged.

d. Leaks in hoses.

e. Leaks at fire stations.

f. Oil leaks from equipment in the vicinity of the staged ammunition.

g. Unauthorized personnel in ammunition staging areas.

h. Report to the officer of the day, every half hour, the status and security of the staging areas.

6.4.2.13 The Explosive Ordnance Disposal officer shall:

a. Ensure two members of the Explosive Ordnance Disposal team are present in the cargo handling area during all ammunition resupply operations.

b. During VERTREP of ammunition position, one Explosive Ordnance Disposal member on the flight deck.

6.4.3 Material Handling Equipment

6.4.3.1 Material handling equipment is that equipment required to transport, handle, or transfer explosives or explosive components carried on board ammunition ships. Information contained in this paragraph is intended as a supplement to existing technical manuals, not as a substitute. A comprehensive listing of approved handling equipment for weapons can be found in NAVSEA OP 2173, volumes I and II (NOTAL). A specialized list of weapons handling equipment required to handle fleet issue unit loads during pier, shipboard, Connected Replenishment (CONREP) and VERTREP evolutions can be found in tables 2-1 and 3-1 of NAVSEA OP 3206, volumes II and III (NOTAL).

6.4.3.2 Handling equipment must be maintained at the optimum level of repair and weight tested at established industrial activities in accordance with applicable maintenance

requirement cards and technical manuals. If extensive maintenance or repair are required, refer to appendix A of NAVSEA OP 3206, volume III (NOTAL), for applicable equipment operating procedures.

6.4.4 Transporting Equipment. Transporting equipment includes the various types of trucks used to transport the ordnance carried on board ammunition ships to and from stowage. The trucks fall into the following categories: fork lift, pallet lift, hand lift, and hand truck. For details relating to description, operation, application, and preventive maintenance on the trucks, refer to NAVSEA OP 3206, volume I (NOTAL). Similar information on guided missile handling equipment, mine handling equipment, and equipment used to transport fleet issue unit load configurations can be found in sections III, IV, and V of NAVSEA OP 3206 (NOTAL).

6.4.5 Dunnage Systems. The dunnage systems employed by ammunition ships consist of two basic types: metal (athwartships and diagonal) and wire net. For application of these systems to the different classes of ammunition ships, general installation techniques, and special configurations for unique loads, refer to chapter 5 of NAVSEA OP 3206, volume I (NOTAL).

6.4.6 Pier Loadout

6.4.6.1 Planning and Coordination. Planning, prior to a pier loadout operation, ensures proper loading of the ammunition ship and an orderly transfer of ammunition between the ship and the ordnance facility. Ammunition ships are loaded in accordance with a specific cargo load plan which shows the location of each item of ammunition. The plan is developed by personnel at the ordnance facilities at Earle, NJ, and Concord, CA. Upon request from higher authority, personnel from these activities will visit the ammunition ship, prior to pier loadout, and formulate the cargo plan, using the replenishment schedule as a guide. There is some flexibility in the plan to accommodate possible changes in the replenishment schedule.

6.4.6.2 Cargo Stowage. Representatives from both the ammunition ship and the ordnance facility determine the final stowage of ammunition at a preloading conference. They must consider the following items:

- a. Designated deck loading capacity of the ship.
- b. Cubic volume and weight of ammunition items.
- c. Distribution of ammunition for proper trim and stability at sea as scheduled transfers are made.

d. Provisions for adequate, clear, working spaces within the holds.

e. Safe location of ammunition in relation to the ship's vulnerability to mine or collision damage.

f. Metal dunnage system usage requirements.

g. Explosive compatibility of ordnance material.

6.4.6.3 Ammunition Loading. The ordnance facility does the loading; however, the ship's commanding officer retains the final responsibility for ensuring that his/her ship is properly loaded within its designed capabilities. Loading procedures must comply with NAVSEA OP 3206 (NOTAL) and must be in accordance with NAVSEA OP 4 (NOTAL) and U.S. Coast Guard, Code of Federal Regulations 46 CFR, Part 146 (Transportation or Storage of Military Explosives). Except as authorized by the Chief of Naval Operations, deviations from the requirements of 46 CFR, Part 146, are not permitted. Should a situation arise in which it appears to be infeasible to meet the requirements of 46 CFR, Part 146, a request for waiver of the specific requirements may be submitted to the Chief of Naval Operations (N411) via the Naval Sea Systems Command. This policy, as currently set forth in OPNAVINST 8020.14/MCO P8020.11 (NOTAL), is not to be construed to interfere with the commanding officer of any ship, that transports military explosives, to take emergency action for the safety of his/her ship, or to meet any military emergency. Should such emergency action result in the deviation of the requirements of 46 CFR, Part 146, the deviation shall be reported to the Chief of Naval Operations (N411) at the earliest opportunity.

6.4.6.4 Equipment Required. Ammunition ships are equipped with loading gear, such as 10-ton cargo booms and 5-ton cranes, making the use of pier cranes optional for loading operations. However, loading can be expedited through the use of pier and floating cranes. The following handling equipment is required:

a. Pallet sling MK 93 MOD 0 or pallet hoisting sling MK 70 MODs 1 and 2.

b. Pallet sling MK 123 MOD 0.

c. Electric forklifts, 4,000-pound capacity, with a minimum 28-inch spacing between the forklift tines (inside dimensions).

d. Pallet lift truck, 4,000-pound capacity.

e. In addition to the above handling equipment, the following items are also required: additional metal stanchions must be available for the stowage of unit loads in

areas where metal dunnage is used; lashing gear and tomming gear; and wood dunnage. Refer to NAVSEA OP 3206, volume I, chapter 5 (NOTAL), for detailed descriptions of the items.

6.4.6.5 Preliminary Operations. The following procedures should be used in preparing the ammunition ship for receiving fleet issue unit loads of ammunition from dock-side:

- a. Mate the port and starboard sections of the elevators to be used (AE 21/23 class ships).
- b. Clear the area between the elevator to be used and the side of the ship nearest the dock of all material and equipment not necessary to the operation.
- c. Review the stowage plan to determine the holds and levels where loads are to be stowed.
- d. Establish phone communication between the personnel in the holds and the main deck area.
- e. Position the dock crane (if used) and transportation conveyance adjacent to holds to be loaded.
- f. Ensure the proper emission control condition is set.
- g. Ensure fire fighting equipment is made available in accordance with NAVSEA OP 4 and NAVSEA OP 3317.

6.4.6.6 Stowage Operation. Fleet issue unit loads of conventional weapons are hoisted aboard the ship and lowered to the predetermined hold or level via elevator. From there, the loads are transported to the prescribed stowage area and secured.

6.4.6.7 Pier Offload. The ammunition ship may have to offload unit loads of conventional weapons considered to be non-serviceable due to age, damage, etc. The operation is essentially the reverse of loadout.

6.4.7 Underway Replenishment

6.4.7.1 Objectives of Replenishment. In order to carry out the Navy's mission, fleet units must be capable of remaining at sea for prolonged periods, fully armed and ready to carry out any assigned task. To accomplish this objective, the Navy transports munitions loaded on ammunition ships to safe areas in the theater and shuttles the ammunition, as required, to combatants in the task force. The fleet combatants receive resupply of ammunition by means of an UNREP. An UNREP is a transfer of a commodity between two ships while underway. Two methods of transfer are employed: horizontal transfer via CONREP rigs and vertical transfer

via helicopter VERTREP. The goal of an UNREP is the safe delivery of the maximum amount of munitions in the minimum amount of time. An UNREP must be accomplished in such a manner that it does not interfere with the primary mission of the supported force. For detailed instructions on all aspects of replenishment at sea, refer to NWP 14 (NOTAL). For transfers between ships of the North Atlantic Treaty Organization nations, see Allied Technical Publication (ATP) 16 (NOTAL).

6.4.7.2 Organization and Command

6.4.7.2.1 Officer in Tactical Command. The officer in tactical command is the senior commander of the UNREP force and the supported force and is responsible for the proper execution of the entire replenishment operation.

6.4.7.2.2 UNREP Force Commander. The UNREP force commander is the senior commander or commanding officer of the replenishment ship. The UNREP force commander is authorized the direct liaison with the supported force commander and is responsible for:

- a. Consolidating munitions prior to replenishment.
- b. Recommending to the officer in tactical command a replenishment course and speed for optimum replenishment conditions. The UNREP force commander shall advise the officer in tactical command of any unusual limitations or characteristics of the replenishment ship which might affect the replenishment or influence the order alongside.
- c. Exercising responsibility for the movement of the replenishment ship en route to the rendezvous area and initiating movement reports as necessary.
- d. Ensuring passage through the designated rendezvous point on time. After contact with the supported force has been established, the UNREP force commander may alter his/her course and speed (unless otherwise directed by the officer in tactical command) to facilitate rendezvous.

6.4.7.2.3 Supported Force Commander. The supported force commander is the senior commander or commanding officer of the ship to be replenished. The support force commander is responsible for:

- a. Selecting and promulgating rendezvous time and place.
- b. Ensuring the submission of requirements as far in advance as possible.
- c. Issuing the order alongside.

6.4.7.3 Replenishment Conference. A replenishment conference is an excellent means of improving the performance of units participating in an UNREP. When a conference can be held, it may be possible to develop a customized plan for a particular UNREP. Particular items which are particularly worthy of discussion are the types and number of rigs to be used; requirements and submission of requirements; and use of experimental rigs, equipment, and techniques.

6.4.7.4 Planning. The overall efficiency of an UNREP is directly proportional to the thoroughness of planning. Even in the case of a small UNREP, thorough planning is required. Transfer rate, breakout problems, rigs, and emission control condition are factors which must be considered when planning an UNREP. To minimize time alongside, plan combinations of CONREP and VERTREP, emphasizing the most efficient method or combination of methods of transfer. Figures 1-2 through 1-5, located in chapter 1 of NWP 14 (NOTAL), are excellent aids for use in the planning of UNREP operations.

6.4.8 Underway Transfer of Ammunition

6.4.8.1 Basic Consideration. The transfer of ammunition at sea is the most exacting and hazardous of all replenishment operations. The greatest of care must be taken to avoid accidents which could result in the destruction of both the ammunition ship and the ship(s) alongside. Great emphasis must be placed on the safe and expeditious handling of munitions.

6.4.8.2 Personnel Requirements. Personnel engaged in the transfer of ammunition shall be qualified and certified and shall observe all safety precautions while handling explosives. They must also be thoroughly familiar with the methods used and their limitations. NAVSEA OP 3347 (NOTAL) and NAVSEA OP 4 (NOTAL) contain safety precautions and handling procedures applicable to ammunition. Because various types of mobile and nonmobile handling equipment are used in transferring ammunition, personnel who work with handling equipment should be familiar with NAVSEA OP 2173 (NOTAL) and section 5 of this instruction. It is of particular importance that care be used when handling new types of ammunition. Technical developments, especially in missiles, lead to new transfer methods and handling equipment. Personnel must master new techniques in handling ammunition and missiles to achieve safe and expeditious transfers.

6.4.8.3 Characteristics of Ammunition Ships (AE, AO, AOE). Ammunition ships are specifically designed to transport and transfer ammunition. Their holds are sheathed, ventilated, and provided with sprinklers for ammunition

safety. Some ships have VERTREP facilities and certain classes are equipped to transfer fuel and provisions as well as ammunition. Normal replenishment speed for ammunition ships, when transferring ammunition, is 12 to 16 knots. Fast combat support ships (AOEs) and major combatants can transfer ammunition at higher speeds when weather and sea conditions permit. The replenishment speed will be promulgated by the officer in tactical command. For data on transfer stations and capabilities of ships, refer to the following:

a. UNREP Stations Capabilities Handbook NAVSHIPS 0905-487-2010 (NOTAL).

b. Fleet Underway Replenishment Guide, COMNAV-SURFPACINST 3180.2E (NOTAL) or COMNAVSURFLANTINST 9010.1G (NOTAL).

c. Fleet and type commander directives.

6.4.8.4 Special Handling Equipment. Ammunition, missiles, and components require special handling equipment for intership transfer because of the large weight and size of the load and because missiles and components are easily damaged during handling. For information on UNREP hardware and equipment, refer to NAVSEA S9570-AD-CAT-101 (NOTAL).

6.4.8.5 Palletized Ordnance. Conventional ammunition is normally transferred on pallets in fleet issue unit loads. Transfer of palletized ordnance requires the use of special slings. For data on the configurations of palletized ordnance unit loads that have been authorized for transfer at sea, refer to MIL-STD 1323 (NOTAL) drawings and NAVSEA OP 3206 volumes I, II, and III. Ammunition ships carry pallet trucks for use by receiving ships in clearing pallets from landing areas.

6.4.8.6 Preparing Missiles and Boosters. Missiles and boosters are normally transferred either in their containers or in the MK 6 dolly. The receiving ship's strikedown system dictates the choice of container or dolly. NAVSEA OP 3192 (NOTAL) and NAVSEA OP 3206 (NOTAL) contain procedures for loading and unloading missiles and boosters into and from the MK 6 missile transfer dollies. Missile components are normally transferred on pallets. MK 45 handlift trucks are available on the ammunition ship for use by the receiving ship if desired. The receiving ship shall provide the information in paragraph 6.4.8.7 to the delivery ship.

6.4.8.7 Exchange of Information. After the replenishment schedule has been determined, the following information shall be exchanged:

a. Commodity identification by type, quantity, and naval ammunition logistics code required at each station.

b. Order of transfer of missiles and boosters, i.e., booster-booster missile-missile or booster-missile booster-missile.

c. Direction that missiles and boosters should face during transfer as dictated by receiving ship's strikedown system.

d. Need to receive partial pallet loads of ammunition if full pallets cannot be handled.

e. Requirements for special handling equipment to expedite strikedown.

f. Missile Return Arrangements. When the receiving ship plans to return missiles, it shall advise the delivery ship of:

(1) Number and type of missiles.

(2) Sequence of transfer cycle: before receiving new missiles or alternately receiving and returning missiles.

(3) Handling equipment requirements.

g. The delivery ship shall advise the receiving ship on the following items:

(1) Transfer stations to be used.

(2) Transfer rigs to be used.

(3) Breakaway procedures to be used when transfers are complete.

(4) Any required deviations from the receiving ship's desired plan.

6.4.8.8 Invoices. Ammunition transfers at sea are normally accompanied by itemized invoices. The receiving ship checks and signs the original invoices and returns them to the delivery ship in the last transfer. If time does not permit this, return them by guard mail or regular mail as soon as possible.

6.4.8.9 Report. It is the delivery ship's responsibility to prepare and submit reports required for the loss or damage of ammunition during transfer; this responsibility is transferred to the receiving ship when the ammunition safely reaches its deck.

6.4.8.10 Preparing Ships for Transfer. Most of the preparation required by the delivery and the receiving ship for the transfer of ammunition is contained in chapters 4 and 5 of NWP 14 (NOTAL). The common preparations in chapter 2 of NWP 14 (NOTAL) also apply. Refer to NWP 14, chapters 4 and 5 (NOTAL), for the list of rigs, in order of preference, the basis for selecting the rigs, and information on preparing transfer stations on the delivery and receiving ships. The checkoff lists of figures 6-4-2 through 6-4-9 should be completed to ensure that all necessary equipment is available, transfer stations are properly rigged, and required personnel are available and aware of their duties. Give specific attention to the following preparations:

a. Limit breakout of ordnance, prior to the replenishment operation, to that required to preclude a significant reduction in the transfer rate.

b. Both ships provide wedges, chocks, and preventers to preclude rolling and shifting of ammunition on deck.

1. Receive and review all station checkoff lists.	_____
2. Check each station to see that it is properly rigged for the method of transfer.	_____
3. Check the distance line for proper length and markings.	_____
4. Ensure that any required handling equipment is in place, operating, and manned.	_____
5. See that any required carriers are on-station (such as cargo nets, skip boxes, transfer-at-sea chair or transfer bags).	_____
6. Start, warm up, and test winches.	_____
7. Ensure that the brake is set on the cargo boom's topping lift winch, and the winch pawl is engaged. If winch is not equipped with a pawl, attach a preventer stopper to the topping lift wire (as appropriate).	_____
8. Rig the proper station markers.	_____
9. Have two bolos and one line-throwing gun ready for use at each station to be used. Test line-throwing gun and examine firing pin. Have extra projectiles and shot lines on-hand.	_____
10. Prepare and test sound-powered phones.	_____
11. Have all men on-station in prescribed uniform with life jackets, hard hats, and other special clothing as required.	_____
12. Rig in movable equipment and fittings that project over the engaged side and are not required during the replenishment (that is, lifeboats and sea painter).	_____
13. Test lifeboat engines. Ready lifeboat for lowering.	_____
14. Have movies, fleet freight, and mail ready for immediate transfer.	_____
15. Have all specified rigs ready for use.	_____
16. In freezing weather, have sand available for use on icy areas. Whenever practicable, remove ice from working areas prior to replenishment.	_____
17. Have repair and emergency tools on-station and ready for use.	_____
18. Make readiness report to officer of the deck.	_____
Remarks:	

Figure 6-4-2. Deck Department Replenishment Checkoff List

1. Light off additional boilers, as necessary. _____
2. Put generators on the line, as required. _____
3. Warm up all deck machinery. _____
4. Maintain fire-main pressure at 100 psi. _____
5. Lead out and inspect necessary firefighting equipment. _____
6. Check all sound-powered phones and circuits that will be used,
both intership and intraship. _____
7. Warm steam cargo pumps. Test all pumps, including electrical.
Recirculate oil. _____
8. Make readiness report to officer of the deck. _____
9. Set restricted maneuvering conditions, when directed. _____

Remarks:

Figure 6-4-3. Engineering Department Replenishment Checkoff List

1. Receive or send requisitions, ration items in short supply, and prepare hatch check sheets.	_____
2. Conduct prereplenishment conference to disseminate information to checker, hatch officers, and leading petty officers.	_____
3. Prestage number of net loads at each transfer station.	_____
4. Predesignate deck space that will be used for transfer, and label the space accordingly.	_____
5. Man replenishment-at-sea detail when called away. Man phone talker stations, status boards, and supervisor stations.	_____
6. Furnish checkers for cargo transferred and received at each station.	_____
7. Prepare cargo scheduled for transfer.	_____
8. Record water cuts, ullage gauges, and temperature of tanks before and after.	_____
9. Make readiness report to officer of the deck.	_____
Remarks:	

Figure 6-4-4. Supply Department Replenishment Checkoff List

Night Replenishment Station # _____

(Petty officer in charge of station will complete this checkoff list in addition to the station checkoff list required for day replenishment.)

1. Have at least two chemical light wand illuminated shot line projectiles on hand for each ship expected alongside. _____
2. Test batteries and bulbs in all flashlights. _____
3. Ensure that a green chemical light or one-cell white flashlight and a whistle are attached to each life jacket in use. _____
4. Have station marker light box properly prepared. Show correct commodity for transfer. _____
5. Have obstructions, fittings, and attachment points marked with red chemical lights or one cell and flashlights. _____
6. Have appropriate colored-lens flashlights or wands available for hand signals. _____
7. Mark each messenger line with canvas tags. _____
8. Rig distance-line illumination. _____
9. Rig lifeline illumination. _____
10. Illuminate working station lighting. _____
11. Ensure approach and station lights have been tested. _____

Remarks:

Figure 6-4-5. Night Replenishment Checkoff List

Missile/Cargo STREAM Station # _____	
(For night replenishment, note supplemental checkoff list.)	
1. Ensure that wires are free of kinks and are spooled on the drum with no riding turns. Additionally, ensure that winch clutches are engaged and that clutch engaging levers are secured in place with toggle pins.	_____
2. Test winches and sliding block in accordance with approved procedures.	_____
3. Ensure that trolley, cargo drop reel, cargo hook, messenger-rigged SURF Traveling Actuated Remotely (STAR), traveling Standard Underway Replenishment Fixture (SURF), and Standard Tension Replenishment Alongside Method (STREAM) manila or burton out haul are properly rigged.	_____
4. Ensure that inhaul is in tension mode.	_____
5. Check pelican hook for ease of operation and presence of cotter pin.	_____
6. Ensure that the messenger is faked down for running and properly attached to the rig.	_____
7. Have line-throwing gun and one bolo at each station to be used. Test line-throwing gun and examine firing pin. Have extra projectiles and shot lines on-hand.	_____
8. Rig station marker.	_____
9. Have signal paddles available.	_____
10. Fake down phone line and test phone.	_____
11. Have required station and emergency tools available.	_____
12. Have cargo nets, net shorteners, skip box, and transfer bag available, as required.	_____
13. Muster men assigned.	_____
14. Make readiness report to first lieutenant.	_____
Remarks:	

Figure 6-4-6. Missile/Cargo STREAM Replenishment Checkoff List

Housefall Station # _____	
(For night replenishment, note supplemental checkoff list.)	
1. Ensure that wires are free of kinks and are spooled on the drum with no riding turns. Additionally ensure that winch clutches are engaged and that clutch engaging levers are secured in place with toggle pins.	_____
2. Ensure that trolley block is properly installed (modified housefall rig).	_____
3. Check operating cargo hook.	_____
4. Have all swivels free and well lubricated.	_____
5. Have all shackles properly secured.	_____
6. Check pelican hook for ease of operation and presence of cotter pin.	_____
7. Fake housefall block messenger down for running.	_____
8. Have line-throwing gun and one bolo at each station to be used. Test line-throwing gun and examine firing pin. Have extra projectiles and shot lines on-hand.	_____
9. Rig station marker.	_____
10. Have signal paddles available.	_____
11. Fake down phone line and test phone.	_____
12. Test all winches.	_____
13. Have required station and emergency tools available.	_____
14. Have cargo nets, net shorteners, skip box, and transfer bag available, as required.	_____
15. Muster men assigned.	_____
16. Make readiness report to first lieutenant.	_____
Remarks:	

Figure 6-4-7. Housefall Station Replenishment Checkoff List

Burton Station # _____	
(For night replenishment, note supplemental checkoff list.)	
1. Ensure that whip is free of kinks and is spooled on the drum with no riding turns.	_____
2. Check operation of cargo hook.	_____
3. Have all swivels free and well lubricated.	_____
4. Have all shackles properly secured.	_____
5. Fake messengers down for running.	_____
6. Have line-throwing gun and one bolo at each station to be used. Test line-throwing gun and examine firing pin. Have extra projectiles and shot lines on-hand.	_____
7. Rig station marker.	_____
8. Have signal paddles available.	_____
9. Fake down phone line and test phone.	_____
10. Test all winches.	_____
11. Have required station and emergency tools available.	_____
12. Have cargo nets, net shorteners, skip box and transfer bag available, as required.	_____
13. Muster men assigned.	_____
14. Make readiness report to first lieutenant.	_____
Remarks:	

Figure 6-4-8. Burton Station Replenishment Checkoff List

- | | |
|---|-------|
| 1. Ensure rudder operational PMS check has been conducted within 48 hours of UNREP. | _____ |
| 2. Notify EOOW of expected approach speed and speed requirement upon completion. Verify plant lineup for evolution. | _____ |
| 3. Cargo and personnel manifest available on bridge (if applicable). | _____ |
| 4. Fuel type and quantity requirement posted on bridge. | _____ |
| 5. As applicable: Set the replenishment detail. | _____ |
| 6. Post name, rank, lineal number of all commanding officers and the name, hull number, voice call of all ships on status board. | _____ |
| 7. Test bullhorn and place in vicinity of captain's chair. | _____ |
| 8. Ensure sound-powered circuits and engineering 'E' call sound power circuits are tested and set up. | _____ |
| 9. Take assigned waiting station as directed by OTC. | _____ |
| 10. Personnel qualification standards qualified master helmsman at the helm. Helm safety supervisor on station. | _____ |
| 11. Determine replenishment order. | _____ |
| 12. Set HERO condition, if applicable. | _____ |
| 13. Receive manned and ready reports from main control, cargo control, after steering, bridge, replenishment stations and departmental reports. Set restricted maneuvering conditions, when directed. | _____ |
| 14. ROMEO at dip, ready to go alongside (300 to 500 yards flashing light at night.) | _____ |
| 15. ROMEO at close-up, commencing approach. Haul up day shapes (at night turn on task and contour lights, signal ROMEO by shielded directional signal lamps or Nancy). | _____ |
| 16. Pass the word over the IMC: "On the (name of ship); stand by for shot line(s), (port/starboard side, fwd, aft, midships, all stations); all hands topside take cover." | _____ |
| 17. When first messenger is in hand, haul down ROMEO. Put smoking lamp out while refueling or handling ammunition. | _____ |
| 18. Fifteen minutes prior to disengaging, receiving ship only, PREP at the dip. | _____ |

Figure 6-4-9. Bridge Replenishment Checkoff List

19. Replenishment complete, last station disengaging, PREP close-up. _____

20. When last line is clear, haul down PREP. _____

21. When clear (200 to 300 yards) of delivery ship, haul down day shapes (switch to normal running lights at night). _____

Remarks:

Figure 6-4-9. Bridge Replenishment Checkoff List (Cont'd)

c. Cover the landing area with rubber matting when bare ammunition is to be transferred.

d. The receiving ship's plan must provide for keeping the landing area clear for arriving ammunition and for expediting strikedown.

e. Ensure the receiving ship has adequate special handling equipment, i.e., MK 45 handlift truck and pallet trucks. If not, it should request the delivery ship to transfer the equipment at the beginning of the evolution. The receiving ship must return all borrowed special handling equipment to the delivery ship when the operation is complete.

6.4.8.11 Load Limitations. The following requirements must be strictly followed:

a. Loads for transfer must meet the requirements for the transfer rig used and for the type of ammunition or missile to be transferred.

b. Safe transfer loads and load limitations established by the Naval Sea Systems Command for the transfer method used.

c. Types of loads, weight limitations, and handling equipment prescribed in NAVSEA OP 3206 for the transfer of ammunition and missiles.

d. Limit loads for transfer to those that can be safely handled under existing conditions. Commanding officers should reduce loads below the permissible maximums during adverse conditions.

6.4.8.12 Test Loads. Prior to transfer of any type of ammunition, test the rigs by cycling a dummy load. The weight of the dummy load must be equal to or greater than the weight of the heaviest loads to be transferred.

6.4.8.13 Handling and Transfer Procedures. Useful sources of information on the transfer of ammunition and missiles are NAVSEA OP 3206 (NOTAL), NWP 14 (NOTAL), MIL-STD 1326 (NOTAL), and NAVSEA S9570-AA-MMA-010 (NOTAL). The following procedures apply to transfer of ammunition and missiles:

a. Use mechanical handling and strikedown equipment, such as roller conveyors and slides, whenever available.

b. Transfer missiles and missile components simultaneously so that if the operation is interrupted, missiles that are already on the combatants will be complete for operational purposes.

c. Adhere to the order for transfer of missiles and boosters as specified by the combatants.

d. Ensure that the missile is oriented in the direction specified by the receiving ship.

e. When an awkward or sensitive missile or ammunition load is to be transferred, use tag lines, a load stabilizer, or a stream strongback to prevent the load from rotating and to control the pendulum action of the load.

f. If the receiving ship does not have the landing area in which to handle full pallet loads, the ammunition ship should send only partial loads.

g. Transfer loose rounds and individual small containers in skip boxes, metal pallet crates, or cargo nets.

h. Once a transfer dolly is unloaded, return it to the delivery ship for reloading and retransfer.

6.4.8.14 Precautions. Replenishment ships shall make ready for use one fire hose, with applicator attached, at each transfer station and one additional hose at each hold, elevator access, or compartment containing or working military explosives when the hatch serving the hold is open. The hoses shall be of sufficient length to reach all portions of the hold or compartment. All hoses shall be charged except when they are exposed to freezing temperatures. Ships, other than replenishment types, shall have two fire hoses, with applicators attached, at each transfer station. All fire hoses shall be charged, except in freezing weather. On carriers, when compliance would result in charged salt water hoses crossing fire control or damage control boundaries (zebra hatches), quick-reel aqueous film forming foam systems may be used in lieu of saltwater hoses, provided that overhead sprinklers in the hangar bay are available and appropriate conflagration stations are manned.

6.4.8.15 References. The following publications contain information that, if used to formulate ammunition handling plans, will result in a smooth, safe, and professional operation:

a. NWP 14 (Replenishment at Sea) (NOTAL).

b. ATP 16 (Replenishment at Sea North Atlantic Treaty Organization (NATO)) (NOTAL).

c. OPNAVINST 8020.14/MCO P8020.11 (U.S. Navy Explosive Safety Policies, Requirements, and Procedures) (NOTAL).

d. MIL-STD 1323 (Palletizing Fleet Issue Unit Loads) (NOTAL).

- e. NAVSEA S9570-AD-CAT-101 (UNREP Hardware and Equipment manual) (NOTAL).
- f. NAVSEA OP 4 (Ammunition Afloat) (NOTAL).
- g. NAVSEA OP 2173 (Approved Handling Equipment for Weapons and Explosives), Volumes I and II (NOTAL).
- h. NAVSEA OP 3192 (Missile Dolly MK 6 MODs 1, 2, 3, and 4) (NOTAL).
- i. NAVSEA OP 3206 (Handling and Stowage of Naval Ordnance Aboard Ammunition Ships), Volumes I, II and III (NOTAL).
- j. NAVSEA OP 3347 (U.S. Navy Ordnance Safety Precautions) (NOTAL).
- k. NAVSEA OP 3565/NAVAIR 16-1-529 (Radio Frequency Hazards to Ordnance, Personnel and Fuel) (NOTAL).
- l. NAVSEA OP 4118 (Handling, Packaging and Transportation of Underwater Mines MK 52, MK 55, MK 56, and MK 57) (NOTAL).
- m. NAVSEA S9570-AA-MMA-010 (Underway Replenishment Ordnance Handling Equipment and Transfer Units) (NOTAL).
- n. U.S. Coast Guard, 46 CFR, Part 146 (Transportation or Storage of Military Explosives) (NOTAL).

6.4.9 Vertical Replenishment

6.4.9.1 Concepts of VERTREP. VERTREP provides a capability for augmenting and enhancing UNREP. It also permits increased flexibility and considerable latitude in replenishment planning, particularly regarding time and location of the UNREP operation. There are some advantages of VERTREP that should be considered in determining the method of UNREP, particularly:

- a. Reduction in overall time required to replenish the supported unit.
- b. Reduction or elimination of time that screening ships are required to be off station.
- c. Reduction in personnel involved.
- d. Capability of replenishing units in a dispersed formation.

e. Capability to replenish units engaged in tasks which make it impossible for them to come alongside.

f. Capability of replenishing units in heavy weather conditions when alongside steaming is hazardous or impossible.

g. Capability of replenishing units on station in shallow water or at anchor.

6.4.9.2 While the VERTREP transfer rate is normally less than the CONREP transfer rate for a major fleet unit, VERTREP can be used to distinct advantage by eliminating the time for approach, hookup, and disconnect in an alongside transfer. This is particularly true during small-scale replenishments when less than 75 short tons are to be transferred. VERTREP transfer rates of up to 180 short tons per hour or 120 lifts per hour can be achieved by a CV or LHA utilizing two helicopters. Some small units cannot receive loads at this maximum rate because of small or partially obstructed VERTREP platforms. To minimize alongside time for small units, a combination of VERTREP and CONREP can be used. Air-Capable Ship Aviation Facilities Bulletin No. 1 specifies the various requirements for all platforms.

6.4.9.3 VERTREP Helicopters. Currently, the H-46 is the most widely used VERTREP helicopter. The H-46 can VERTREP ammunition on its external cargo hook or by internal loading. The H-46's tandem rotor configuration allows maneuverability without the wind restrictions normally associated with tail rotor helicopters. Thus, ships may vary course and speed while undergoing VERTREP. The H-2 series helicopters have a limited VERTREP capability because of their configuration and operational limitations. The H-3 series helicopters were not designed with a VERTREP capability. However, several have been modified by the addition of an external hook, and they therefore have a limited capability. CH-53 helicopters are equipped with external cargo hooks and are used by the Marine Corps for vertical lifts and by the Navy for vertical on board delivery operations. UH-1 helicopters are equipped with external cargo hooks and have a weight-limited VERTREP capability. Refer to NWP 3-04.1 (NOTAL) for the general capabilities of the type of helicopter employed. The number of helicopters used during a VERTREP will depend on:

- a. Number of helicopters available.
- b. Type and number of ships being replenished.
- c. Distance between ships.
- d. Ability of the receiving ship to keep the cargo drop area(s) clear.

e. Ability of the delivery ship to provide ammunition at a sufficient rate.

f. Administrative flights scheduled by the helicopter coordinator.

g. Helicopter aircrew proficiency and training requirements.

6.4.9.4 Ships Stationing. See figure 9-1 of NWP 14 (NOTAL) for typical ship stations for VERTREP.

6.4.9.5 Helicopter Coordinator. The replenishment group commander will designate a helicopter coordinator to control and coordinate all helicopters and VERTREP operations. Normally, the helicopter coordinator will be the senior commanding officer of the replenishment ship with VERTREP helicopters embarked and participating in the operation. The helicopter coordinator will make appropriate recommendations to the replenishment group commander concerning:

a. Recommended replenishment course for optimum relative wind for helicopter operation.

b. Delivery ship position in the formation to shorten the distance between transferring and receiving ships to enhance VERTREP effectiveness without hazarding other ships in formation.

c. Coordination of helicopter administrative flights through the officer in tactical command.

6.4.9.6 VERTREP Equipment. Certain cargo handling, load-carrying, and auxiliary equipment is needed for VERTREP. Some items have been used for CONREP for a number of years. A few have been designed specifically for VERTREP. For applicable types of equipment, descriptions, and their proper uses, refer to NAVSEA OP 4098 and NWP 14 (NOTAL).

6.4.9.7 VERTREP Preparations. Plan a VERTREP operation several days before the actual flight operation. From 3 to

15 days before a scheduled VERTREP, distribute issue documents for customer ships to cargo hold captains. Hold a replenishment planning conference to develop a munitions breakout plan. From 1 to 3 days in advance of the scheduled delivery, begin breakout, strikeup, pallet assembly, and pre-tagging. Stage as much ammunition as possible near the VERTREP area before the actual operation begins. The primary concern when preparing loads is to provide a load that will ride safely in flight and arrive at the receiving ship undamaged. VERTREP loads differ from CONREP loads in that they are subject to extremely high winds from rotor downwash during hover and during the flight between ships. The detailed procedures in NAVSEA S9570-AA-MMA-010 (NOTAL) and NWP 14, chapter 9 (NOTAL), for preparing ordnance loads for VERTREP can also be used for preparing other types of loads of similar configuration. Prior to flight operations, ensure the VERTREP checklist in figure 6-4-10 has been completed.

6.4.9.8 Weight and Identification of Loads. As each load is made up, mark the load with its weight and any identification required by the customer. The method of marking depends on the procedure of the individual delivery ships. Use chalk, felt-tipped pen, or a tag. Tags may be color-coded for easier identification. VERTREP loads shall be color-coded when transfers are conducted under emission control conditions.

6.4.9.9 Sling Attachment and Staging Unit Loads. Prior to actual flight operations, ensure that the proper adjustable pallet slings are being used and that they are properly attached in accordance with the procedures outlined in NAVSEA S9570-AA-MMA-010 (NOTAL) and NWP 14 (NOTAL). Primary considerations in preparing and executing the flight deck cargo staging plan are outlined below:

a. Sufficient clear space should be left on the deck to pull out the helicopter and to provide adequate clearance for takeoff and a landing area for possible emergency landings.

b. Complete staging of the flight deck after VERTREP has commenced is permissible provided another certified landing area is available that is satisfactory to the helicopter detachment officer in charge.

1. Turn navigational aids on.	_____
2. Lay out VERTREP gear.	_____
3. Lower nets.	_____
4. Set ZEBRA in vicinity of flight deck.	_____
5. Preposition material handling equipment.	_____
6. Muster working party.	_____
7. Flag HOTEL ONE at the dip.	_____
8. Lower flagstaff, antennae, and obstructions (as appropriate).	_____
9. Conduct foreign object damage walkdown.	_____
10. Establish receive and transmit communications at helicopter control station.	_____
11. Have lifeboat manned and ready.	_____
12. Have crash and rescue team manned and ready.	_____
13. Have flight deck manned and ready.	_____
14. Hoist day shapes.	_____
15. Determine launch and recovery course and speed.	_____
16. Put smoking lamp out in vicinity of flight deck.	_____
17. Obtain permission from bridge to land and launch helicopter(s).	_____
18. For night operations:	
(a) Double-check darken ship.	_____
(b) Light suit on deck.	_____
(c) Wands on station.	_____
(d) Task lights energized.	_____
(e) Deck lights on.	_____

Figure 6-4-10. VERTREP Replenishment Checkoff List

c. All staged unit loads must be located within the hover area, bounded by periphery or hover lines, and be accessible for pickup by the hovering helicopter.

d. Sufficient room shall be left for hookup personnel to move about; always have an escape route available.

e. Load height will be such that hookup personnel can accomplish the task without climbing on loads. Hookup personnel should remain on deck at all times.

f. Sufficient room must be left between loads to reduce the possibility of snagging and tipping adjacent loads during pickup.

6.4.9.10 Load Transfer Procedures. Internal loads are usually far more time-consuming than external loads and should therefore be avoided except for transfer at great distances where a landing area is available for offloading. Before operations start, provide pilots and crewmen with the name, type, hull number, and location in the formation, frequencies, and tactical voice call of the receiving ship. As each load is picked up, display information, including destination and weight of each load, on a chalkboard from a position clearly visible to the pilot. An alternate method is to write the weight of the load with chalk on the side of the upper eye of the MK 106 sling, where it can be easily seen by the helicop-

ter crewman during hookup. As the helicopter nears the UNREP ship, its approach is announced over the deck edge speakers. All personnel shall clear the pickup zone, except hookup personnel who take positions alongside the load and hold the pendant up to signal the load location to the pilot. Guided by signals from the landing signal personnel, the pilot maneuvers the helicopter to hover over the load. A helicopter crewman, viewing the deck through the open cargo hook access hatch, advises the pilot via internal communication system, as to the helicopter's exact position over the load. As the helicopter hovers over the load, the hookup person hands the pendant to the aircrew in the cargo hatch and clears the area, moving toward the landing signal personnel. The crewman then slips the pendant over the safety hook and ensures that the load is secure and ready for lifting. That method ensures positive hookup of the pendant and eliminates unnecessary and unsafe chasing of the helicopter by hookup personnel. The aircrewman aboard the helicopter then gives the pickup and liftoff directions to the pilot in order to clear the load from the pickup area. The aircrewman aboard the helicopter is the primary director of the helicopter once it is in a hover over the pickup or drop area. The landing signal enlisted personnel shall also continue giving directions in case of internal communications failure or other emergencies of which the flight crew is unaware. Radio transmissions to helicopters hovering over the VERTREP zone are distracting to the pilot and should be of an urgent nature only.

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CHAPTER 6.5

Conventional Weapons Handling Procedures Afloat (CV and CVN)

6.5.1 General. This chapter provides information and promulgates standardized procedures that will facilitate safe, efficient handling of conventional aviation ordnance aboard CV and CVN class ships. This information, in conjunction with the individual ship's conventional ordnance safety and handling bill procedures and the CV Naval Air Training and Operating Procedures Standardization (NA-TOPS) manual, provides the direction necessary to establish a viable ordnance handling program.

6.5.2 Weapons Department Administrative and Operational Organization. The weapons department administrative and operational organizations are not standard and functional assignments may vary from ship to ship. The following charts are examples of typical CV and CVN Weapons Department Administrative and Operational Organization (see figure 6-5-1 and figure 6-5-2).

6.5.3 Responsibilities

6.5.3.1 Weapons Officer. The weapons officer is responsible to the commanding officer for the supervision, direction, proper requisitioning, safe procurement, handling, stowage, inventory accuracy, and issue of all ordnance and ammunition. Weapons officer duties, responsibilities, and authority are listed below:

- a. Oversee the supervision of operation, care, and maintenance of the ship's armament magazines and ready service lockers.
- b. Supervise and direct the procurement, handling, stowage, accounting, and issue of aviation ordnance, ammunition, and pyrotechnics.
- c. Ensure periodic inspections of magazine sprinkler systems in accordance with NAVSHIPS 0348-077-1-1000 (NOTAL).
- d. Maintain the physical security and integrity of magazines and ready service lockers, including the control of assigned keys.
- e. Provide stowage for all ordnance and ammunition.
- f. Ensure the training of all personnel assigned to the weapons department in the handling, stowage, characteris-

tics, and safety precautions pertaining to all ordnance handled on board.

- g. Provide required space for Explosive Ordnance Disposal (EOD) personnel, equipment, and publications and direct the EOD team when embarked.

- h. Administer and monitor the Explosive Handling Personnel Qualification and Certification Program in accordance with OPNAVINST 8020.14/MCO P8020.11 (NOTAL).

- i. Perform such other duties as may be directed.

6.5.3.2 Planned Maintenance System and Maintenance Data System Coordinator. The planned maintenance system and maintenance data system coordinator is responsible to the weapons officer for the proper execution of the weapons department planned maintenance and data system program. His/her duties include:

- a. Coordinate the efforts of the various divisions and work centers to achieve complete and accurate execution of the planned maintenance system and Maintenance and Material Management (3M) Programs.
- b. Reduce and analyze 3M reports to provide meaningful information to the weapons officer regarding the maintenance efforts within the department.
- c. Screen and control the issue of maintenance control numbers to the department and job control numbers for work requests.
- d. Establish and conduct the department's planned maintenance system and 3M training program.
- e. Maintain the department's master current ship's maintenance project.
- f. Maintain the department's maintenance history report.
- g. Maintain the department's work request discrepancy log.
- h. Perform such other duties as may be assigned.

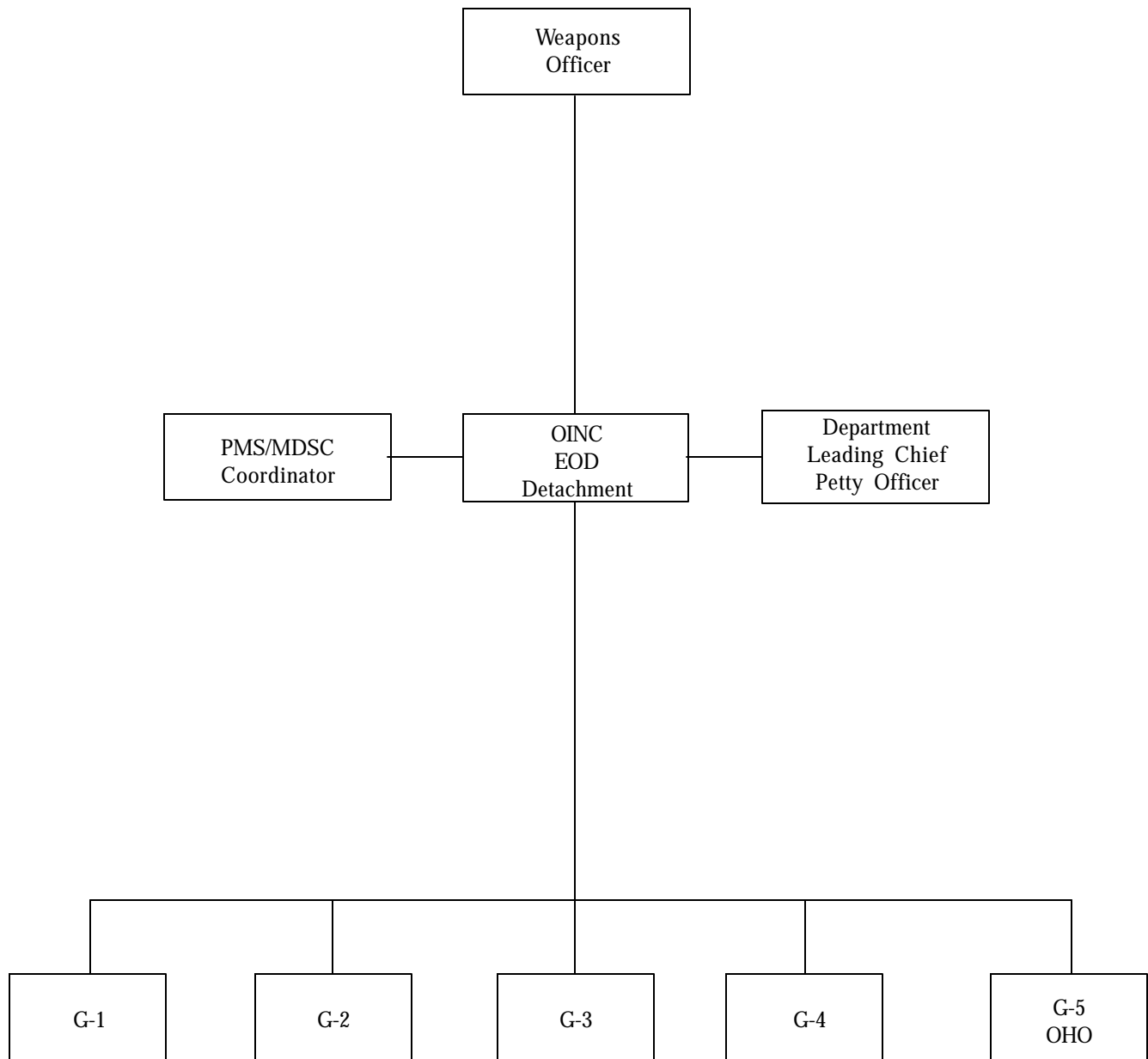


Figure 6-5-1. Typical CV/CVN Weapons Department Administrative Organization.

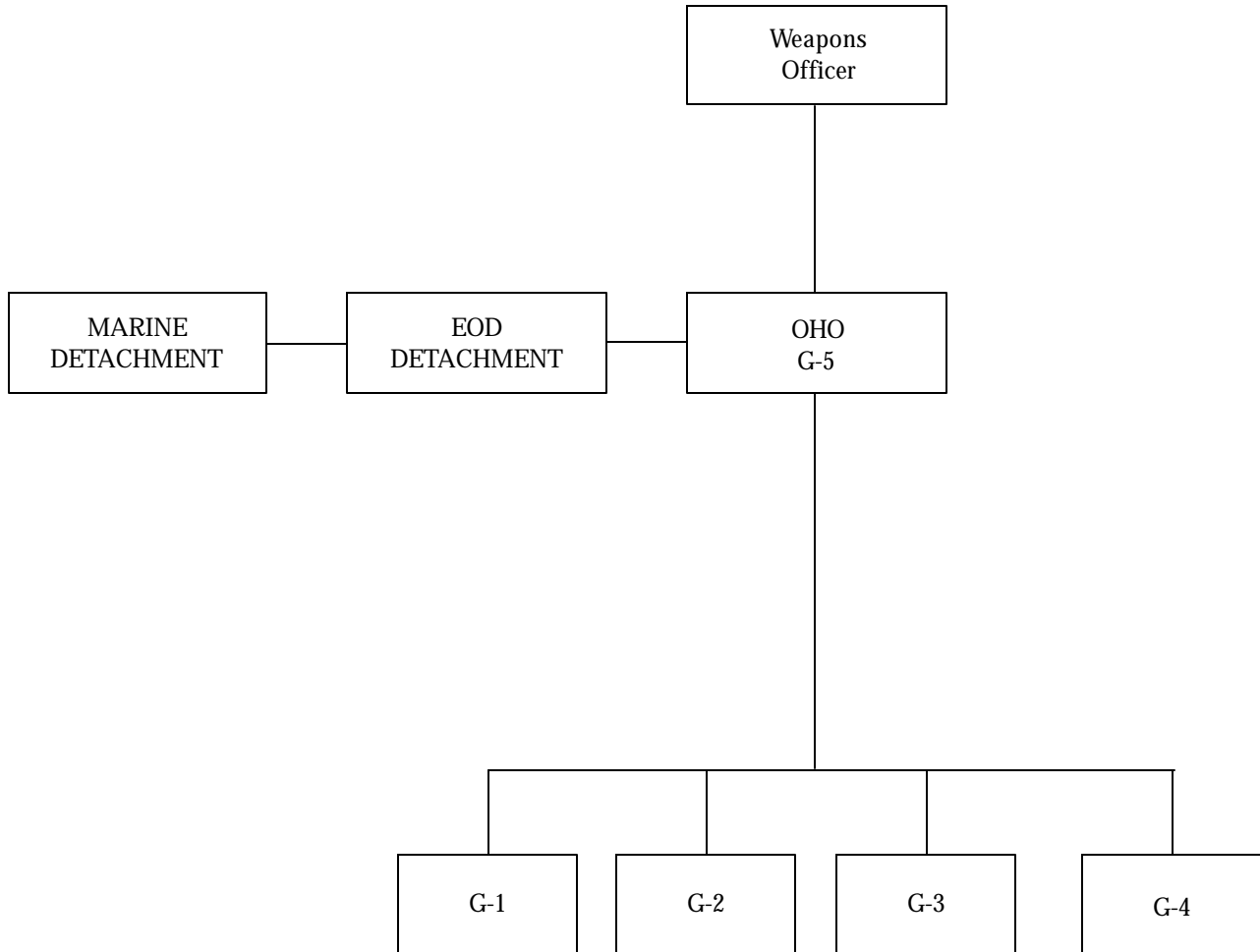


Figure 6-5-2. Typical CV/CVN Weapons Department Operational Organization.

6.5.3.3 EOD Officer. The EOD officer duties are outlined in chapter 6.1. To accomplish assigned tasks, the EOD officer shall ensure the following:

- a. A training program is conducted for EOD personnel.
- b. Prescribed safety precautions are observed.
- c. Hazardous U.S. or foreign conventional ordnance are disposed of.
- d. EOD personnel are qualified in accordance with current directives.
- e. EOD personnel are properly stationed in flight deck control when flight operations involving live ordnance are in progress.
- f. During general quarters and periods of ammunition handling and loading, the team is available to the ordnance handling officer.
- g. Reports are submitted on all ordnance disposal or recovery operations.
- h. All current publications concerning EOD and diving operations are on hand and are properly maintained.
- i. The diving qualification expiration dates for EOD personnel are current.
- j. Safe diving practices are followed and pertinent safety precautions are observed and posted.
- k. The weapons officer, command duty officer, and the officer of the deck are notified upon commencement of diving operations.
- l. The ship's chief engineer has the EOD divers at his disposal for screw, rudder, and hull inspection.

6.5.3.4 Ordnance Handling Officer (G-5 Division Officer). The ordnance handling officer is responsible for ensuring the efficient operation and maintenance of all magazines, sprinkler systems, bomb elevators, and associated handling equipment. Additionally, the ordnance handling officer is responsible for proper requisitioning, stowage, safe handling, assembly and disassembly, and issue of all conventional ordnance and explosives. The ordnance handling officer will normally:

- a. Exercise operational control of all divisions within the weapons department through their respective division officers.
- b. Coordinate and direct the movement of all ordnance in the ship including special weapons and bomb dearming units.

- c. Ensure proper operating procedures and safety precautions are strictly followed in the assembly and movement of all conventional ordnance, including the arming and dearming of embarked aircraft.

- d. Oversee the aviation ordnance divisions in the maintenance and security of magazines and ready service lockers.

- e. Maintain liaison with the strike operations officer and the embarked air wing ordnance officer to ensure proper types and quantities of ordnance are available.

- f. Ensure availability of training ordnance for shipboard and embarked airwing rearming drills.

- g. Provide assistance, as may be required by the EOD officer, for rendering safe recovery and disposal of explosive ordnance which has been fired, dropped, or launched in such a manner as to constitute a hazard to operations, installations, personnel, or material.

- h. Monitor the training program.

- i. Exercise overall supervision of ammunition working parties and ensure all personnel have been instructed in pertinent safety precautions prior to conducting such evolutions.

- j. Supervise the training of selected personnel to man the aviation weapons movement control station.

- k. Notify the weapons officer of any ordnance casualty or other equipment failures which may reduce the department's effectiveness.

- l. Frequently inspect assigned equipment to ensure compliance with operational, maintenance, and repair instructions. Review operational casualty reports.

- m. Direct the requisitioning, safe handling, stowage, assembly, disassembly, maintenance, and issue of all conventional ordnance and components and ensure the proper records and reports are prepared, submitted, and maintained.

- n. Ensure the Nonnuclear Explosive Ordnance Qualification and Certification Program is adhered to.

6.5.3.5 G-1 Division Officer (Air Gunner). The air gunner is responsible to the ordnance handling officer for the safe and efficient issue of ordnance and ammunition on the flight deck to embarked air wing ordnance personnel. The air gunner assists the CV ordnance officer to ensure the safe arming and dearming of embarked aircraft. Other duties of the air gunner are to:

- a. Be responsible for the stowage and issue of pyrotechnics and ordnance and ammunition in all ready service lockers and staging areas. The air gunner will coordinate

with the ordnance handling officer on the timely delivery of aviation ordnance to the embarked air wing in accordance with the ordnance load plan.

- b. Ensure the security of assigned spaces.
- c. Provides safety oversight for arming and dearming of embarked aircraft. Provide interface between the weapons department, air department, and air wing personnel.
- d. Be responsible for posting cookoff times and observance of applicable safety precautions, operating instructions, and casualty procedures in assigned spaces.
- e. Keep the ordnance handling officer informed of any conditions which might affect the safe and efficient operation of the department.
- f. Ensure a dynamic, continuous aviation ordnance training program is in effect.
- g. Ensure that an active Tool Control Program is in effect and that all equipment calibration and weight testing are accomplished.
- h. Ensure accomplishment of the planned maintenance system.
- i. Perform such other duties as may be assigned.

6.5.3.6 G-2 Division Officer (Ship's Gunner). The ship's gunner is responsible for the operation and maintenance of the magazines, magazine sprinkler systems, weapons elevators, and the ship's small arms. The ship's gunner will ensure periodic testing of magazine and weapons elevators sprinkler systems. The ship's gunner is responsible for stowing and safeguarding all assigned munitions, inspecting magazines, and maintaining proper logs.

6.5.3.7 G-3 Division Officer. The G-3 division officer is responsible for the stowage, breakout, assembly, and delivery to the hangar deck and is responsible for the movement, safe handling, and storage of all conventional ordnance, including air launched missiles, on the hangar deck. The G-3 division officer reports directly to the ordnance handling officer, and supervises the organizational maintenance on all munitions handling equipment, including electric forklifts. The G-3 division officer ensures all necessary intermediate maintenance (afloat) is performed on air launched missiles prior to packaging in containers. The responsibility of han-

gar deck ordnance movements and Armament Weapons Support Equipment Program (AWSEP) maintenance may be assigned to G-1 division at the discretion of the weapons officer. Ensure that an active Tool Control Program is in effect and that all equipment calibration and weight testing are accomplished. Ensure accomplishment of the planned maintenance system.

6.5.3.8 G-4 Division Officer. The G-4 division officer is responsible for the operation and maintenance of the ship's weapons elevators and the training and licensing of the elevator operators; pneumatic, electric, and manual overhead hoists; and the training and licensing of the elevator operators. Ensure that an active Tool Control Program is in effect and all equipment calibration and weight testing are accomplished. Ensure accomplishment of the planned maintenance system.

6.5.3.9 Weapons Department Leading Chief Petty Officer. The weapons department leading chief assists the weapons officer and acts in an advisory capacity for all matters pertinent to the welfare, job satisfaction, motivation, utilization, and training of weapons department enlisted personnel. The weapons department leading chief assigns section leaders, approves watch bills, and observes the work effort for all conventional ordnance evolutions.

6.5.4 Safety

6.5.4.1 It is difficult to cover every possible situation which may arise and which, unless properly handled, may have serious results. Carelessness, noncompliance with procedures, disorganization, uncalled for haste, ignorance, complacency, and lack of effective leadership are some of the most significant causes of ordnance accidents.

6.5.4.2 It has been said that ordnance safety precautions are written in blood. This is basically true, as most ordnance safety precautions now in existence have come about as the result of accidents in which men have been killed or injured. Printed precautions alone cannot prevent accidents. Safe operating procedures must be explained in detail by those who know to those who do not. Safety consciousness must be instilled by constant supervision, instruction, and training, for safety is both the result and reflection of good training, and the two are inseparable. The contents of NAVSEA OP 3347 (Ordnance Safety Precaution) (NOTAL) should be common knowledge to all personnel engaged in the handling of explosive devices.

6.5.5 Ordnance and Ammunition Requisitioning and Issue

6.5.5.1 All ordnance and ammunition necessary to support the ship's fill allowance, mission load, and air wing training requirements will be ordered by the weapons department. The weapons officer shall ensure timely submission of ordnance and ammunition requisitions to meet planned operations. The weapons officer shall submit requisitions as provided in the current revisions of NAVSUP P-724 (NOTAL) and CINCPACFLTINST 8010.12 (NOTAL). All requisitions for conventional ordnance and ammunition, not to be filled from in-theater assets, shall be sent to the Ships Parts Control Center. Include the inventory manager as an information addressee in requisitions for non-fleet assets sent via naval message.

6.5.5.2 No ordnance and ammunition will be issued to embarked units without prior authorization of the ordnance handling officer. All ordnance and ammunition listed on the daily ordnance load plan shall be issued to support flight operations. Ordnance and ammunition not included on the load plan (cartridge actuated devices, small arms, etc.) will be issued in the following manner: the requisitioning squadron or department shall submit a standard DD form 1348, signed by the air wing ordnance officer, to the weapons department, indicating the type, naval ammunition logistics code, quantity, and desired issue time. Upon arrival, the ordnance and ammunition may be picked up at a designated delivery point, depending on the type and quantity of ordnance and ammunition. Personnel picking up the ordnance and ammunition shall be qualified and certified in accordance with applicable instructions and sign for the material delivered. The air wing commander will provide a listing of these certified personnel to the aviation weapons movement control station immediately upon embarkation of the air wing.

6.5.6 Ordnance and Ammunition Upload and Backload

6.5.6.1 General. The ordnance and ammunition necessary for supply and resupply of the ship's mission load and ship-fill allowance is normally loaded or backloaded during underway periods. Therefore, a plan for the expeditious but safe accomplishment of the evolution is an absolute necessity to reduce alongside time. It is imperative that each individual involved know exactly what will be expected of him. An uploaded and backloaded plan will be published prior to each evolution. The plan will assign responsibilities and provide specific procedures or instructions to be followed during the upload or backload.

6.5.6.2 Air Launched Missile Presentencing. All air launched missiles and 8E cognizance materials must under-

go a missile presentencing inspection prior to download for the purpose of determining those assets that require retest and recertification and those that are ready-for-issue to other activities. The inspection is performed under the cognizance of the Naval Air Warfare Center Weapons Division, Point Mugu, Fleet Weapons Support Team or by the off loading ships Intermediate Level personnel. The ship shall provide the following to assist in the inspection

- a. DD 1348 shipping documents.
- b. Serial numbers of all 8E cognizance material on board.
- c. Identification by serial number of those missiles which have been used for ready service, or captive carried.

6.5.6.3 Packaging and Handling Team. Prior to download, all weapons must be palletized in fleet issue unit loads in accordance with applicable MIL-STD-1323 (WR54). Naval Weapons Handling Center Earle provides personnel to assist in this effort. The Naval Weapons Handling Center will provide the ship with the latest edition of MIL-STD-1323 (WR54) (NOTAL) and a list of required material (banding, wood, etc.) if provided with a list of weapons by type and quantity to be downloaded. The team's services can be requested by message to the applicable type commander.

6.5.6.4 Assignment of Responsibilities

6.5.6.4.1 Weapons Officer

- a. Exercise overall responsibility for the execution of ammunition handling evolutions.
- b. Keep the commanding officer, executive officer, and the officer of the deck informed regarding programs and estimated time of completion of the evolution.

6.5.6.4.2 Ordnance Handling Officer

- a. Supervise the evolution under the direction of the weapons officer.
- b. Inform the officer of the deck or the navigator when the weapons department is manned and ready for underway replenishment or Vertical Replenishment (VERTREP) of ammunition.
- c. Ensure that safety precautions are promulgated and that all personnel involved are properly indoctrinated.
- d. Ensure proper stowage of all ammunition.
- e. Ensure proper accounting and reporting.
- f. Direct the movement of ammunition.

6.5.6.4.3 Air Officer

- a. Ensure required aircraft elevators are manned.
- b. Ensure conflagration stations are manned.
- c. Ensure twin-agent units and MB-5 fire truck are manned.
- d. Ensure flight and hangar decks are properly spotted in accordance with the onload or offload plan.
- e. Provide landing signal personnel for VERTREP.
- f. Ensure primary flight control is manned.
- g. Conduct VERTREP.
- h. Provide the aviation weapons movement control station and officer of the deck with an up-to-date VERTREP count.

6.5.6.4.4 Navigator

- a. Ensure the officer of the deck is briefed not to conduct any drills during ordnance handling evolution.
- b. Keep the ordnance handling officer advised of any adverse weather conditions.

6.5.6.4.5 Safety Officer. Ensure adequate safety observers are available.

6.5.6.4.6 Aircraft Intermediate Maintenance Department Officer

- a. Ensure all available forklifts are ready for use and certified for explosive handling in accordance with NAVSEA OP 4098.
- b. Ensure qualified forklift maintenance personnel are available.
- c. Ensure qualified forklift operators are available.

6.5.6.4.7 Supply Officer

- a. Provide refreshments during evolution.
- b. Provide box lunches as required.

6.5.6.4.8 Chief Engineer

- a. Ensure pump rooms and aqueous film forming foam stations are manned as applicable.
- b. Provide support and maintenance personnel for weapons elevators and communication systems.
- c. Ensure that the ship has no more than a 3 degree list and that no unauthorized hot work is in progress during the evolution.

6.5.6.4.9 Medical Officer

- a. Provide corpsmen as per load plan.
- b. Ensure ship's dispensary is prepared to receive possible casualties.

6.5.6.4.10 Deck Officer

- a. Ensure preparation and manning of convention replenishment stations for ammunition transfer.
- b. Provide weapons department and the officer of the deck updated with transfer lift count.

6.5.6.4.11 Marine Detachment

- a. Provide security personnel during evolution.
- b. Provide working party personnel in accordance with load plan.

6.5.6.4.12 Officer of the Deck. When notified by the ordnance handling officer, set emission control conditions, smoking condition, and ensure bravo flag is hoisted.

6.5.6.4.13 Air Wing Commander. Provide squadron augmentee personnel as required

6.5.6.4.14 Chief Master-at-Arms. Provide master-at-arms as required.

6.5.6.4.15 EOD Officer. Ensure EOD personnel are properly positioned during entire evolution.

6.5.7 Aviation Weapons Movement Control Station or Aviation Ordnance Control Station. The aviation weapons movement control station, usually called "ordnance control," provides the centrally located control station and communication network necessary to coordinate and control all weapons movement on the carrier. The control station is manned by a select cadre of ordnance personnel under the supervision of the ordnance handling officer. The aviation weapons movement control station is the only location within the weapons department that has direct communication with damage control central, bridge strike operations, flight deck control, EOD, primary magazines and all ammunition transfer and staging areas. Additional functions of the aviation weapons movement control station are as follows:

- a. Acts as primary contact point for emergencies involving explosive ordnance.
- b. Maintains an accurate and current log of all significant events.
- c. Maintains the location of all ordnance outside of magazines.

d. Maintains accurate records of breakout of ordnance in support of the daily ordnance load plan including any changes.

e. Monitors the issue and receipt of all ordnance and expenditures.

f. Distributes the daily air ordnance plan to departmental personnel.

g. Monitors and keeps cognizant personnel advised of any out-of-the ordinary occurrences, changes to load plan, accidents, incidents, system malfunctions, magazine floodings, high temperature alarms, etc.

6.5.8 Improved Rearming Rate System

6.5.8.1 As more complex aircraft with greater combat capabilities are developed, the ship's task in support of these aircraft becomes more demanding. The Improved Rearming Rate System (IRRS) was initiated to maximize the full capability of the carrier-based aircraft. It also improves airborne weapons handling and stowage capability throughout the logistic sequence, increases the survivability of an aircraft carrier in a combat environment by maximizing the amount of ordnance handled inside the protective armored envelope, and increases the volume of ordnance available for loading onto strike aircraft.

6.5.8.2 Objectives of the IRRS are to:

- a. Optimize support equipment quantities and capabilities.
- b. Optimize airborne weapons strikedown and strike-up.
- c. Optimize methodology training for weapons personnel.
- d. Minimize sortie recycle time.
- e. Minimize alongside time during replenishment.
- f. Enhance the efficiency of the carrier's conventional aviation ordnance evolution through advanced hardware design.
- g. Minimize ordnance personnel peak demand.

6.5.8.3 Key Elements of the IRRS

6.5.8.3.1 The key elements of the IRRS are organizational structure, communications, load plans, support equipment, support spaces, elevators, assembly evolutions, ordnance flow routes, and the single hoist ordnance loading system.

6.5.8.3.2 To ease the burden and reduce the dangers of handling ordnance, many special items of handling equip-

ment have been designed. This equipment is generally painted yellow (except for strongbacks, lifters, and some hoists). The gear includes fork trucks, pallet jacks, hoists, weapon skids, and skid adapters. Much of this equipment comes under the armament weapons support equipment program as discussed in volume II section 8.

6.5.8.4 System Support Equipment

6.5.8.4.1 Weapons carriers provide a quick means of attaching ordnance to a hoisting device. Using overhead rails, items can be moved from one area to another. In bomb assembly, they are used to lift the bombs from pallets to the bomb assembly stand and from the stand to a skid.

6.5.8.4.2 Bomb Assembly Stand A/F32K-1/1A has four trays on top of rollers. The rollers under each tray permit a 360-degree rotation of the bomb. The stand places the weapon at the optimum personnel work height and the individual sections collapse for ease of stowage. The stand supports bombs and other weapons during buildup to provide assembly line efficiency with reduced personnel fatigue.

6.5.8.4.3 The AERO 21 weapon skid is the main weapons support equipment item (along with its various adapters) used in carrier aviation ordnance support.

6.5.8.4.4 The AERO 12/C bomb skid, with adapters, provides a means of transporting ordnance in the assembly area and on the hangar and flight decks.

6.5.8.5 Storage and Handling Areas. Storage and handling areas are those spaces used in aviation ordnance evolutions. The key areas related to IRRS are magazines, assembly areas, staging and transfer areas, and other support areas.

a. Ready Service Magazines, Lockers, and Inert Stowage Spaces. Magazines, lockers, and stowage spaces are conveniently located spaces above the waterline used to stow a small amount of ready-for-issue ordnance items, including missiles.

6.5.8.5.1 Magazines. The term magazine, in reference to the storage of ordnance and ammunition aboard ship, means any compartment or locker which is used for the storage of explosives or munitions pyrotechnics of any kind. Magazines are designed by the Naval Sea Systems Command (COMNAVSEASYS COM). Specific design considerations are given to individual weapons peculiarities and the total explosive content of the weapons to be stowed. Types of weapons to be stowed in each class of naval vessel are determined by Chief of Naval Operations and are largely influenced by type commander and fleet commander in chief (threat scenario) inputs. When the quantity and type of weapons are determined, the Chief of Naval Operations directs COMNAVSEASYS COM to produce a ship's technical

manual for shipboard stowage and handling of airborne weapons. Concurrently, the Naval Inventory Control Point is tasked with producing a "COMNAVSEASYSCOM Ship-fill and Mission Load Listing" for the individual ship involved. NAVSEA OP 4 is the weapons department authority regarding the handling and stowage of ammunition afloat (figure 6-5-3). The COMNAVSEASYSCOM magazine arrangement planning aide assists the weapons departments in determining the exact quantities of weapons that can be stowed in any particular magazine. NAVSEA OP 3347 gives the safety regulations governing weapons handling evolutions. Magazines onboard aircraft carriers are of two basic types: primary and ready service.

a. **Primary Magazines.** Primary (sometimes referred to as "deep stow" magazines) are designed to accommodate the ship's complete allowance of ammunition. They are located below the main deck and below the waterline within the armored envelope. They are equipped with high temperature alarms, flooding alarms, and automatic salt water sprinkler systems and have the capability of being securely locked.

b. **Ready Service Magazines, Lockers, and Inert Stowage Spaces.** Magazines, Lockers, and stowage spaces are conveniently located spaces above the water-line used to stow a small amount of ready-for-issue ordnance items, including missiles.

6.5.8.5.2 Assembly Areas. Assembly areas are controlled spaces below deck that are designated for assembly of conventional weapons. It is common on most aircraft carriers to have two assembly areas, one in the forward section of the ship and one in the aft section of the ship. The areas are located on the fourth or fifth deck, depending on the class of the carrier. The assembly area can also be used to load Multiple Ejector Racks (MER) or Triple Ejector Racks (TER). The mess deck can also be used as an alternate assembly area.

6.5.8.5.3 Staging and Transfer Areas. These are areas in which ordnance is temporarily accumulated or is transit. The

transfer area will usually afford the safest and quickest route of travel from buildup to staging areas. Staging areas (flight deck, hangar deck, sponsors) are used to stow a ready supply of complete assembled weapons which is readily available to the air wing for loading. All weapons in staging areas shall:

- a. Be on mobile trucks or skids.
- b. Be convenient to jettison ramps.
- c. Have two clear access routes covered by sprinkler systems or manned fire hoses.
- d. Be located as far as practical from fueling stations and liquid oxygen carts.
- e. Be manned and have provisions for physically securing the weapons.

6.5.8.6 Weapons Elevators. Weapons elevators are the "backbone" of the aircraft carrier's weapons handling system. They provide the means to vertically transfer weapons from the magazines to the required deck. All elevators are classified as either upper or lower stage. Upper stage elevators operate between the second deck and the main or flight deck. Lower stage elevators operate below the main deck. Elevator systems vary depending on the class of the carrier. Specific guidelines can be found in the particular carrier's operating instructions.

6.5.8.7 Preloading MERs and TERs. The techniques and hardware necessary to preload MERs and TERs were developed under IRRS to increase deliverable weapons tonnage and reduce aircraft rearming time. As a result, a more efficient and safer aircraft loading procedure has evolved which requires fewer personnel and less equipment on the flight deck. IRRS establishes a MER and TER preloading area below the deck where assembled bomb-type weapons, prepositioned on a skid, are attached to the MERs and TERs. The entire assembly (rack and weapons) is then transferred to the flight deck for loading onto embarked aircraft. Prior to IRRS, MERs and TERs remained on the aircraft and were manually loaded one by one.

Reference: NAVSEA OP 4

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Figure 6-5-3. General Regulations for Ammunition

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6.5.8.8 General Evolutions and Flow. Airborne weapons handling evolutions introduce a degree of risk in carrier operations that requires careful planning and preparation. The necessity to train for and to conduct combat operations requires the acceptance of certain risks which cannot be avoided in the handling of ordnance on board CVs and CVNs. The flow of weapons from or to magazines, assembly areas, and staging areas must be timely and safe.

6.5.8.8.1 Breakout. Breakout involves the physical removal of ammunition from magazines. Breakout is accomplished by various means, such as palletized loads using forklifts and low lift pallet trucks. Containerized weapons are decanned utilizing overhead hoists, and weapon components are broken out manually (i.e., fuzes, booster, fins, pyrotechnics, etc.). Weapons are broken out under the direction of the ordnance handling officer in accordance with the daily load plan. The breakout crew records type, quantity, and lot number and passes the information to the aviation weapons movement control station.

6.5.8.8.2 Assembly. Assembly takes place in one of the designated bomb assembly areas. Components broken out from stowage are assembled by the bomb assembly crew which is under the direction of the G-3 division officer. The assembled weapons are placed on weapons skids and transferred by weapons department personnel to the staging area.

6.5.8.8.3 Aircraft Loading. This is accomplished by air wing ordnance personnel in accordance with applicable directives and is the end product of the IRRS. The ordnance that may be carried varies with the performance and structural design of the aircraft and the characteristics of the ordnance items.

6.5.8.9 IRRS Rates

6.5.8.9.1 Strikeup Rate. The time frame goal for the transportation of weapons from the magazine to the hangar or flight deck is 49 tons in 22 minutes. This goal is being achieved on CV-59 and newer ships. On the older carriers, the rate is 40 tons in 30 minutes.

6.5.8.9.2 Strikedown Rates. The time frame goal for transportation of weapons, staged on the flight and hangar deck, to the magazines is 200 tons per hour. This goal is achievable on CV-59 and newer ships.

6.5.8.9.3 Alongside Time. The alongside times for initial and resupply evaluations has been reduced by approximately 60 percent. Initial supply time has dropped from 32 hours to 10 hours and resupply times has been reduced from 10 hours to 4 hours.

6.5.9 Aircraft Loading, Arming, Darming, Rearming, and Downloading

6.5.9.1 Weapons handling evolutions in support of and by the embarked air wing introduce an ever increasing degree of risk in carrier operations. To minimize the degree of risk involved, standardized procedures as set forth in the CV/CVN NATOPS manual and the applicable Naval Air Systems Command (COMNAVAIRSYSCOM) conventional weapons loading manuals and checklists shall be followed. These publications provide the best available operating instructions for most circumstances; however, no manual is a substitute for sound judgment and effective supervision. It is incumbent on all personnel to stop any ordnance handling evolution which appears to be unsafe and to report the circumstances to any ship or air wing officer immediately.

6.5.9.2 Responsibilities

6.5.9.2.1 The air officer shall ensure that:

- a. All hangar deck conflagration stations are manned.
- b. There are clear access routes to weapons elevators. If flight deck weapons elevators are inaccessible, provide for an aircraft elevator as an alternate.
- c. Recommendations are made pertaining to recovery of aircraft with hung ordnance in accordance with the CV/CVN NATOPS manual (see figure 9-5-4). Announcements of hung or unexpended ordnance are passed to flight deck personnel.
- d. Clear dearming areas are available during recovery of forward firing ordnance.
- e. Proper fire stations and equipment are manned.

6.5.9.2.2 The weapons officer shall ensure that:

- a. There is a breakout of the proper types and quantities of ordnance to fulfill the requirement set forth in the conventional ordnance load plan.
- b. Ordnance is assembled into approved, complete configurations, except for final fuzing and arming and thorough quality control checks are completed prior to leaving assembly area.
- c. Proper hazards of electromagnetic radiation to ordnance conditions are set prior to moving aircraft ordnance into susceptible areas.
- d. Delivery of aircraft ordnance is made to the loading or ready ordnance staging areas.
- e. Qualified supervision is provided for all loading, arming, dearming downloading or rearming and that strict compliance with safety instructions is enforced.

f. Qualified EOD personnel are available.

g. A flight deck crew is maintained to receive weapons on the flight deck for issue to squadron personnel and to act as ship's ordnance safety observers with appropriate authority.

h. Recommendations are made pertaining to the recovery of aircraft with hung ordnance, as delineated in the CV/CVN NATOPS manual.

i. All ordnance asset and expenditure reports are prepared and submitted in a timely manner.

6.5.9.2.3 The aircraft intermediate maintenance department officer shall ensure properly trained test and check out crews are provided for recycling MERs and TERs in support of the IRRS.

6.5.9.2.4 The air wing commander shall ensure:

a. That air wing personnel are properly trained and adhere to the ship's ordnance safety requirements.

b. Through squadron ordnance officers, that assigned aircraft are properly configured to receive ordnance, and are loaded, in accordance with the conventional ordnance load plan, utilizing the aircraft's COMNAVAIRSYSCOM weapons loading manual and checklist.

c. That all aircraft loading, downloading, arming, and dearming evolutions are properly supervised.

d. That the integrated arming and dearming teams are available and properly trained.

6.5.9.3 Aircraft Loading and Downloading

6.5.9.3.1 The preferred method of loading and downloading weapons is through the use of the single hoist ordnance loading system, which consists of the HLU-196 bomb hoist unit, various adapters, and stores trolleys. Each individual loading checklist contains the single hoist ordnance loading system equipment requirements. This system eliminates the excessive amount of manpower required when utilizing the manual loading and downloading method. Additionally, it reduces personnel fatigue and potential injury factors.

6.5.9.3.2 Air wing ordnance personnel, utilizing the COMNAVAIRSYSCOM release and control checklist for the applicable aircraft, shall verify the condition of the aircraft's weapon system prior to loading weapons.

6.5.9.3.3 Aircraft loading and downloading is accomplished by air wing ordnance personnel in accordance with the appropriate COMNAVAIRSYSCOM conventional weapons loading manual and checklist. The procedures outlined in these publications are mandatory and ensure safe, effective ordnance evolutions. Each task follows a set sequence of events which complements and supports the total evolution. Safety and reliability are key elements in all loading procedures.

6.5.9.4 Aircraft Arming and Dearming

6.5.9.4.1 In most instances, aircraft carriers employ the use of an air wing integrated arming and dearming team. This team is comprised of a safety supervisor or team leader and two arming and dearming personnel. There is usually one team assigned to each catapult. The teams are highly trained, qualified, and certified personnel drawn from the embarked squadrons. The air wing ordnance officer directs their efforts and is responsible for their training.

6.5.9.4.2 Arming and dearming shall be conducted in the approved areas in accordance with the procedures outlined in the loading checklist utilizing the hand signals contained in the CV/CVN NATOPS manual and figure 6-1-1 of this instruction.

6.5.9.4.3 Under no circumstances shall unauthorized personnel participate in the arming or dearming of aircraft. When an aircraft returns from its flight, or the flight is cancelled, the aircraft shall be downloaded as soon as possible unless it is scheduled to fly on the next launch or is placed in an alert status.

6.5.9.5 General and Specific Safety Precautions. Safety precautions, warnings, and notices are contained in the CV/CVN NATOPS manual, loading manuals, checklists, and the ship's 8020.1 instructions. Figure 6-5-5 is a checklist of flight and hangar deck aircraft ordnance handling procedures.

6.5.9.6 Weapons Cookoff. Explosives handled on the flight or hangar decks are subjected to an environment of hot jet or starting unit exhausts and the everpresent possibility of a fuel or aircraft fire. Catastrophic consequences can and have resulted from the prolonged exposure of ordnance to extreme temperatures. Therefore, it is incumbent upon all hands to ensure that hot exhausts are not permitted to impinge upon explosive items. Figures 6-5-6 through 6-5-8 provide cookoff times for ammunition normally handled on board the carrier.

Weapon	Hangar Deck		Recovery (8)	
	Load	Strikedown/ Download	Unexpended	Hung
General Purpose Bombs/Guided Bomb Units DST (all series) MK 77 Fire Bomb (all series) 2.75/5.00-inch Rocket Launchers (all series)	YES (1) (6) YES (5) NO NO	YES (7) YES (7) NO NO (3)	YES (2) YES (2) NO YES	YES (2) YES (2) NO YES
Aircraft Parachute Flare (MK 45) Aircraft Parachute Flare (LUU-2B/B) Tube Loaded Flare Dispenser (loaded with MK 45 Flare) Tube Loaded Flare Dispenser (loaded with LUU-2 B/B)	NO YES (12) NO YES (12)	NO YES (12) NO YES (12)	NO YES (12) YES YES (12)	NO YES (12) YES YES (12)
20-MM Guns(8) (13) ROCKEYE II AMRAAM (all series) SIDEWINDER (all series) SPARROW III (all series)	YES YES (6) NO (3) (4) (5) NO (5) NO (5) (6)	YES (8) (13) YES (7) YES (6) YES YES (7)	YES YES YES YES YES	YES YES YES YES YES
WALLEYE Weapon (all series) PHOENIX AIM-54 (all series) MAVERICK (all series) HARPOON AGM-84/SLAM AGM-84E/SLAM ER AGM-84H Decoy Flare (all series)	YES (6) NO (5) NO (4) NO (5) (6) NO	YES (7) YES (7) YES YES (7) NO	YES YES YES YES YES	YES YES YES YES YES
Mines (all series) Torpedoes (all series) SUS Charge MK 64 Photoflash Cartridges Marine Marker (all series)	YES (6) YES (6) YES NO YES	YES (7) YES (7) YES NO YES	YES YES YES YES YES	YES YES YES YES YES
Practice Bombs (all series) JAU-1B and JAU-22/B JSOW AGM-154 (all series) 25-MM Gun GAU-12 Chaff (w/Cartridge) PENGUIN AGM-119B	YES (6) YES YES(6) YES YES NO	YES (7) YES (10) (11) YES(7) YES (13) YES NO	YES YES YES YES YES YES	YES YES YES YES YES YES

Figure 6-5-4. Weapons Loading/Strikedown/Downloading and Recovery Guide

Notes

1. No mechanical nose fuzes shall be installed on the hangar deck.
2. Arming wires and safety clips intact.
3. Authorization to perform a maintenance action is listed on this figure.
4. CVs with centerline elevators may lower aircraft to hangar deck only if downloading on the flight deck will delay the launch. Hangar deck down-loading shall be performed immediately after the aircraft is in spot and tied down.
5. Air launched missiles shall not normally be loaded on the hangar deck except when operational commitments so dictate. Commanding officers may authorize loading of missiles on the hangar deck only up to the point of mechanical attachment of the weapon to the launcher and rack in accordance with the procedures prescribed in the appropriate COMNAVAIRSYSCOM weapons and stores loading checklists/stores reliability cards.
6. Ejector cartridges shall not be installed on the hangar deck. Installation of ejector or jettison cartridges in the BRU-9/10/11/32 ejector bomb rack is authorized provided the rack is electrically disconnected, and either the mechanical safety pin is installed or the inflight operable bomb rack lock mechanism is locked.
7. In the event of a strikedown of a loaded aircraft to the hangar deck, the nose fuzes (as applicable) and ejector or jettison cartridges shall be removed immediately after the aircraft is in spot and tied down. Ejector or jettison cartridges may remain in the BRU-9/10/11 ejector bomb rack provided the rack is electrically disconnected, and either the mechanical safety pin is installed or the inflight operable bomb rack lock mechanism is locked.
8. The M61A1 gun ammunition is exempt from downloading requirements for up aircraft temporarily spotted in the hangar decks and aircraft undergoing limited maintenance, that is, turnaround maintenance, providing compliance with all gun dearming procedures of the airborne weapons and stores loading manual, associated checklists, and stores reliability card have been accomplished.
9. Guidance provided in this figure is subject to individual aircraft tactical manual limitations.
10. Maintenance on loaded aircraft applies.
11. Sonobuoy chutes shall be downloaded immediately after aircraft is in spot and tied down.
12. Impulse cartridges must be removed from LUU-2 and dispenser with LUU-2.
13. Strikedown/download of aircraft with jammed 20-MM/25-MM guns and gun pods is prohibited.

Figure 6-5-4. Weapons Loading/Strikedown/Downloading and Recovery Guide (Cont'd)

6.5.10 Ammunition Transaction Reporting. Timely and accurate reporting of all ammunition transactions into the Conventional Ammunition Integrated Management System (CAIMS) is the responsibility of each reporting activity. All CAIMS users have an obligation to pursue apparent errors in the CAIMS data base and ensure their reconciliation.

Detailed information regarding the implementation and operation of this system is contained in the implementing directive, OPNAVINST 8015.2 (NOTAL) and NAVSUP P-724 (NOTAL). Questions relating to NAVICP fleet reporting should be referred to the NAVAMMOLOGCEN Mechanicsburg PA.

Reference: CV NATOPS		
<u>Item</u>		<u>Page</u>
1.	Strike operations shall prepare the ordnance load plan. No changes authorized unless approved by strike operations officer.	2-2
2.	Authorized flight deck clothing and proper markings.	2-3
3.	Standard signal wands for arming and dearming for supervisor and crew.	2-4
4.	Air wing ordnance officer or designated representative shall visually inspect each ordnance loaded aircraft.	4-1
5.	Hot exhaust from aircraft or aircraft starting units a hazard to weapons.	4-2
6.	Aircraft carrying ordnance arming procedures.	4-5
7.	All weapons dearmed prior to push-back on catapult.	4-8
8.	EOD representative immediately available at flight deck level during launch and recovery of ordnance loaded aircraft.	5-21
9.	EOD officer, air gunner and air wing weapons officer equipped with SRC-22 (or equivalent) radio.	5-21
10.	Emergency drills during ordnance handling evolutions.	6-6
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12.	Electrical power applied during aircraft loading and downloading.	6-7
13.	Announced drills during ammunition replenishment.	6-7
14.	Ordnance jettison ramps exercised daily prior to flight.	6-8
15.	Aircraft elevators may be used to supplement weapons elevators.	6-8
16.	Simultaneous fueling and loading of aircraft.	6-8
17.	Loaded aircraft on hangar deck.	6-8
18.	Mechanical latching of ordnance to aircraft racks and launchers prior to starting engines.	6-9
19.	Inert ordnance shall be treated as live.	6-9
20.	Pilot notify ship at Marshal and when calling "Ball" of hung or unexpended weapons except for those routinely received aboard, i.e., air-to-air missiles.	6-9

Figure 6-5-5. Flight and Hangar Deck Safety Checklist

Reference: CV NATOPS (Cont'd)

<u>Item</u>		<u>Page</u>
21.	Air officer to announce over 5 MC of hung or unexpended ordnance returning aboard.	6-9
22.	Dearming or downloading of returned hung or unexpended ordnance.	6-9
23.	Maintenance on loaded aircraft.	6-9
24.	Ejector cartridges on bomb racks on the hangar deck.	6-10
25.	Operations officer responsible for setting HERO.	3-3
26.	Weapons staging area requirements for jettison, access and fire fighting.	6-7
27.	Catapult slot seals in place on bow cats during recovery.	5-20
28.	Area immediately ahead and behind aircraft clear during arming.	6-1

Figure 6-5-5. Flight and Hangar Deck Safety Checklist (Cont'd)

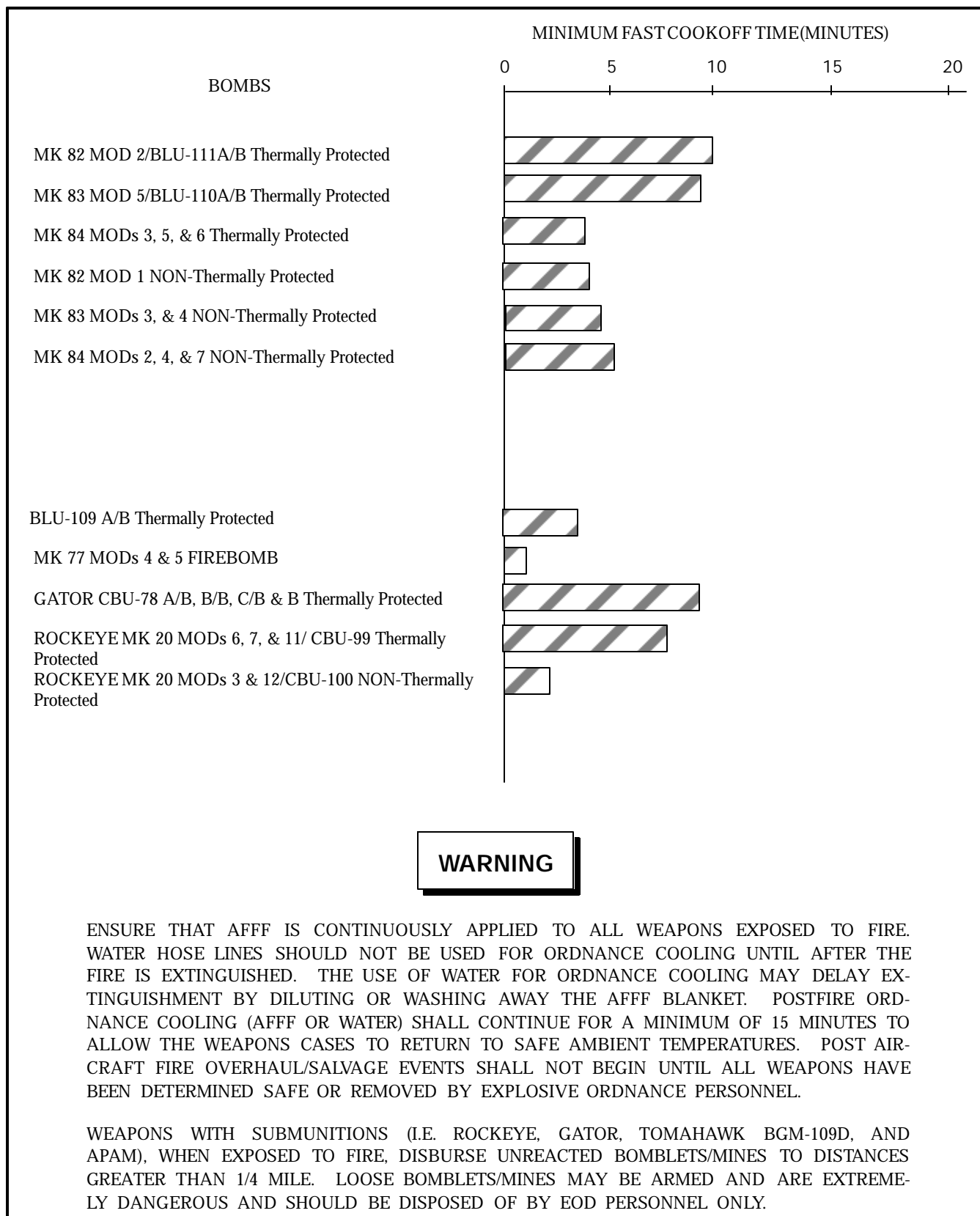


Figure 6-5-6. Bomb Cookoff Time Summary

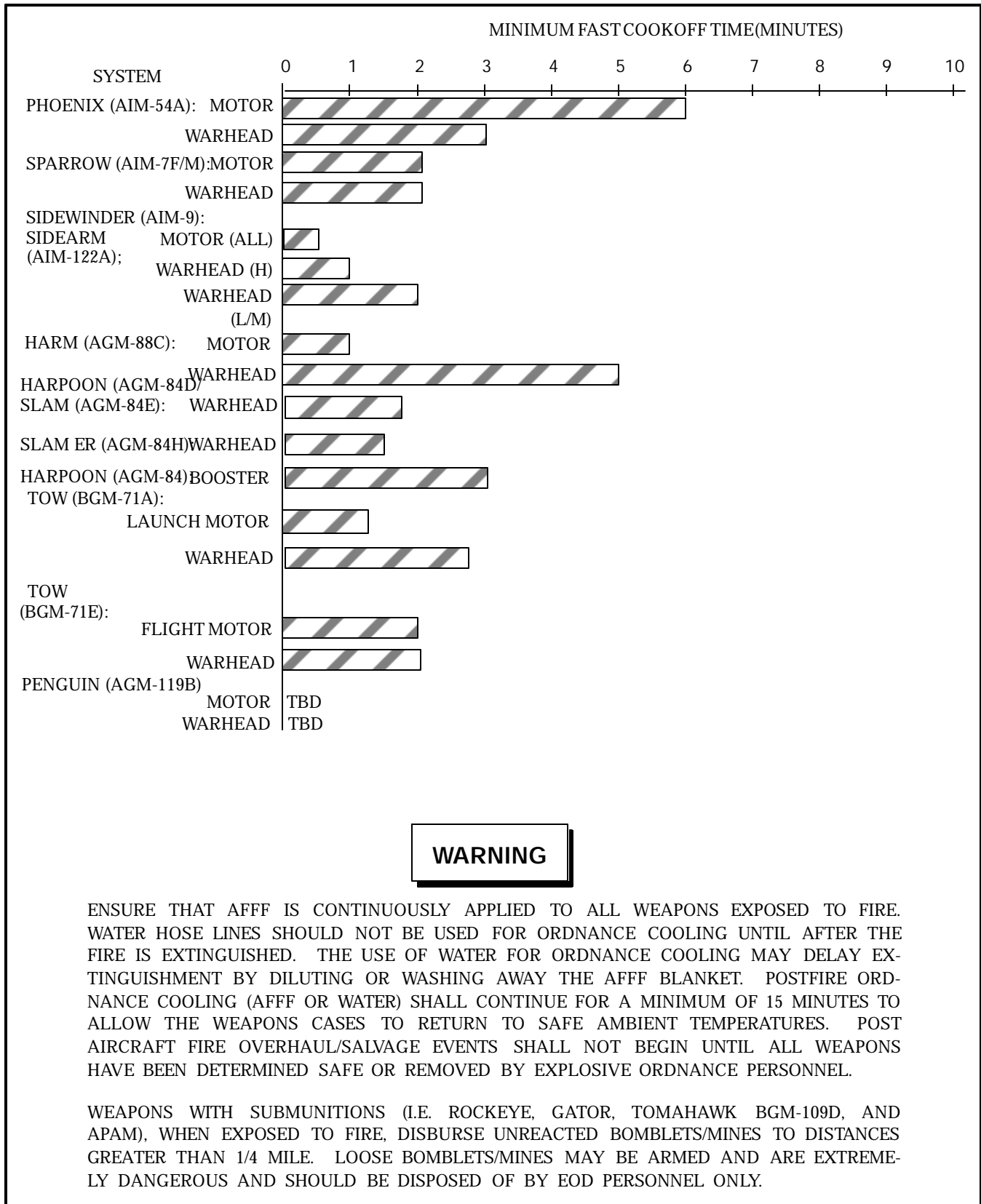


Figure 6-5-7. Air Launched Missile Cookoff Time Summary

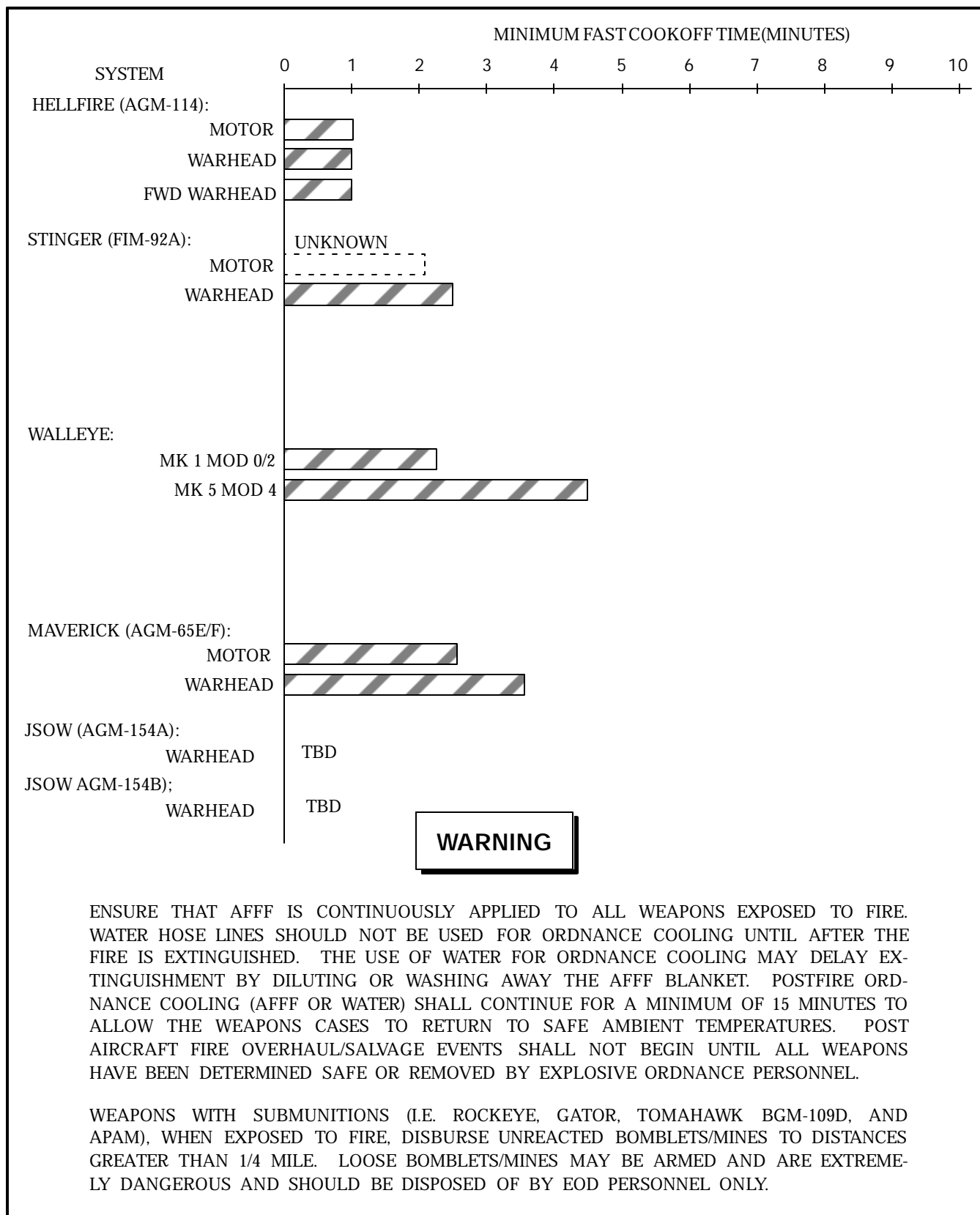


Figure 6-5-7. Air Launched Missile Cookoff Time Summary (Cont'd)

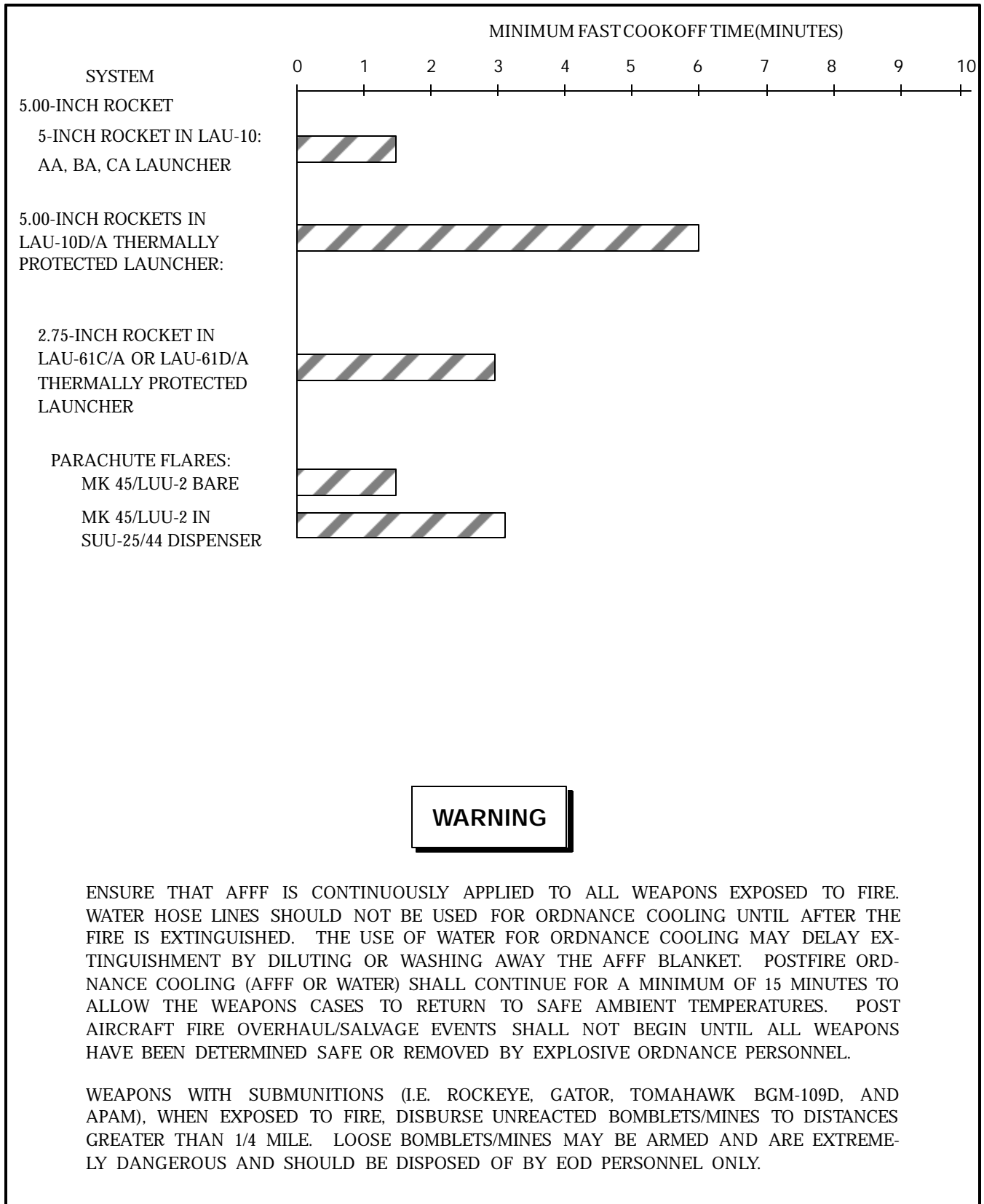


Figure 6-5-8. Rocket Cookoff Time Summary

SECTION 7

Aircraft Armament Equipment

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CHAPTER 7.1

Introduction

7.1.1 General. This section addresses maintenance program management of aircraft armament equipment. During a weapon system's deployment life cycle phase, maintenance program management is a critical management function due to the impact of maintenance requirements on the effective use of personnel, materials, facilities, and fiscal resources. Maintenance program management functions include maintenance planning, coordinating, budgeting, and evaluating program progress. Aircraft armament equipment is under the technical cognizance of the Naval Air Systems Command (COMNAVAIRSYSCOM). Inventory management responsibilities are assigned on an interim basis to the Naval Ammunition Logistics Center (NAVAMMOLOG-CEN) via COMNAVAIRSYSCOM (AIR-3.1).

7.1.2 Responsibilities

7.1.2.1 The Assistant Commander for Logistics and Fleet Support (AIR-3.0), through the Logistics Management Division (AIR-3.1), is responsible for the maintenance management and funding of airborne weapons maintenance programs. COMNAVAIRSYSCOM (AIR-3.1) is responsible for management, integrated logistics support, and maintenance engineering functions pertinent to airborne weapons systems under COMNAVAIRSYSCOM cognizance.

7.1.2.2 Assistant Program Managers, Logistics (APML) within COMNAVAIRSYSCOM (AIR-3.1) plan and implement integrated logistics support and project support management activities for major weapons systems. APMLs are responsible directly to weapons system program managers, air (PMA) for logistics aspects of acquisition programs from inception through deployment and eventual phaseout from the active inventory. COMNAVAIRSYSCOM (AIR-3.1) APMLs are directly responsible to the Director AIR-3.1 for the effective planning and development of operationally effective and cost-effective support systems for acquisition programs, and management of ILS for out-of-production programs.

7.1.2.3 Volume I, section 2 chapter 2.2 defines maintenance functions that apply to aircraft armament equipment. Chapter 2.3 assigns maintenance responsibilities that apply to aircraft armament equipment. Volume II, section 7, chapters 7.2, 7.3, and 7.4 describe organizational, intermediate, and depot level maintenance actions that apply to aircraft armament equipment.

7.1.3 Scope. Aircraft armament equipment encompasses all equipment which is or can be attached either permanently or temporarily to an aircraft, the use of which allows for the carriage and release of airborne stores. Aircraft armament equipment includes bomb racks and shackles for all practice and tactical, single and multiple weapon design configurations and their aircraft-peculiar fairings; pylons and adapter hardware; missile launchers, including their related entities such as power supplies, nitrogen receivers, and aircraft-peculiar pylons; adapters, rails, and interface components; and external fuel stores jettison release mechanisms.

7.1.4 Aircraft Armament Equipment Categories. There are two categories of aircraft armament equipment. They are:

a. **Aircraft Inventory Material.** Aircraft inventory items are semipermanently attached to an aircraft and are transferred with the aircraft from one aircraft-controlling custodian to the next. Examples of aircraft inventory material include bomb racks, guided missile launchers, and pylons and fairings, the removal of which could affect the structural or aerodynamic integrity of the aircraft. The items are generally referred to as parent racks.

b. **Mission-Oriented Material.** Mission-oriented material includes those aircraft armament equipment items and the accessory suspension equipment which are assigned to and maintained by intermediate level maintenance activities. Mission-oriented material is configured by intermediate level maintenance activities to satisfy the specific organizational mission requirements. Upon completion of the mission, mission-oriented material is returned to the intermediate level maintenance activity who performs any necessary maintenance actions or reconfiguration to satisfy the next mission requirement. During periods of extended operations material may remain in custody of organizational levels until an inspection is due or the item fails to function properly. Mission-oriented material is generally issued to organizational level users with store or stores attached (pre-loaded). Mission-oriented material includes such items as Multiple Ejector Racks (MER), Triple Ejector Racks (TER), and the HARM, HELLFIRE, and MAVERICK guided missile launchers.

7.1.5 Applicability. This section applies to the aircraft armament equipment described below. Major aircraft armament equipment items are described in paragraphs 7.1.6 and 7.1.7.

7.1.6 Aircraft Bomb Racks. Bomb racks are aircraft armament equipment items which provide for the suspension, carriage, and release of ordnance items from the aircraft. Most bomb racks are installed semipermanently on an aircraft and are referred to as parent racks. Bomb racks are generally classified as ejector or free-fall. A free-fall bomb rack allows the ordnance item to fall from the rack when all the requirements of the launch sequence have been satisfied, while release from an ejector type bomb rack is accomplished by the firing of a cartridge actuated device which then ejects the item or items. Figure 7-1-1 provides a listing of the bomb racks currently in use and identifies their application and the type of release mechanism employed. A brief description of the bomb racks is provided in paragraphs 7.1.6.1 through 7.1.6.16.

7.1.6.1 MERs and TERs. MERs (A/A37B-6E) and TERs (A/A37B-5E) are accessory suspension aircraft armament equipment which attach to a parent rack. Both the MER and TER consist of an adapter assembly (strong back) ejector units (three on an A/A37B-5E, six on an A/A37B-6E), a wiring harness, and an aircraft hardware adapter kit. The TER is capable of carrying three stores and the MER can carry as many as six stores attached to the ejector units (i.e. BRU-20 Ser. or MAK-79). Each ejector unit has four adjustable sway braces and two mechanically locking suspension hooks spaced 14 inches apart. Each ejector unit is equipped with a safety stop lever located on the rear sway brace assembly which, when rotated to the locked position, prevents accidental stores release. The improved MER (BRU-41) and improved TER (BRU-42) have been introduced to the fleet to replace the MER and TER. These racks incorporate internal modifications that improve bomb rack reliability and maintainability. The improved multiple ejector rack and improved triple ejector rack also incorporate an electronic control unit which controls all bomb rack functions.

7.1.6.2 Aero 7A and Aero 7B Bomb Ejector Racks. The Aero 7A bomb ejector rack is a parent ejector rack which employs two sets of suspension hooks, one pair for 14-inch and one pair for 30-inch suspension stores. The Aero 7A bomb rack utilizes a safety pin to prevent inadvertent weapon or store release. When installed, the safety pin actuates a microswitch to electrically interrupt the firing circuit, grounds the breech caps, and mechanically prevents the ejector hooks from opening. Inspection windows over each set of hooks provide visual evidence of sear positioning for a positive hook-locked indication. The Aero 7B bomb ejector rack is also a parent ejector rack. The Aero 7B bomb ejector rack, although similar to the Aero 7A in operation, is 2 inches shorter in height and the dual breech mechanism is side-mounted to provide additional deck clearance for loaded stores on the fuselage centerline station on the A-6E aircraft.

7.1.6.3 MK 8 Bomb Shackle. The MK 8 bomb shackle is a parent rack used to carry and release weapons and stores.

The shackle is equipped with two suspension lugs spaced 14 inches apart, a cocking lever, a release lever, and two fixed yokes for attachment to a pylon. During weapons or stores loading, the shackle hooks are closed manually by actuating the cocking lever, when the weapon suspension lugs are in position. Hooks are locked by allowing the spring loaded release lever to move to its full aft position. When the release lever is moved forward (either electrically by the bomb shackle release or manually), the latching lever moves down and away from its engagement with the latching block. This action allows the hook opening spring and the weight of the bomb to move the hook link assembly forward. The bomb is then released.

7.1.6.4 BRU-11A/A, BRU-11A/B Bomb Ejector Rack. The BRU-11A/A bomb ejector rack is a parent rack and is similar to the BRU-10, with the addition of an in-flight operable bomb rack lock mechanism. The in-flight operable bomb rack lock mechanism consists of a remotely controlled bomb rack lock and emergency release (auxiliary unlock). The lock/unlock actuator is controlled electrically or manually during loading and unloading or ground check evolutions.

7.1.6.5 Aero 65A Bomb Rack. Aero 65A bomb rack is a parent rack which provides for the carriage, arming, and release of stores weighing up to 1,000 pounds and having 14" suspension lugs. When the AERO 65A bomb rack is fitted with the AERO 1A adapters, it can carry weapons or stores with 30" suspension, weighing up to 2,000 pounds. The AERO 65A bomb rack consists of a U-shaped frame, an electrical release unit, two arming solenoids, two hook assemblies, a release linkage assembly, a hook tie linkage assembly, and a cable assembly.

7.1.6.6 BRU-14/A Bomb Rack. The BRU-14/A bomb rack is a parent rack which provides for suspension and release of stores weighing up to 2,000 pounds. Two suspension hooks provide for attachment of weapons or stores having 14-inch suspension lugs. Aero 1A adapter assemblies may be added to increase the bomb rack to 30-inch suspension capacity. The BRU-14/A is a modified Aero 65A bomb rack which has been adapted for use with P-3C and S-3A aircraft. Major components consist of a linear electromechanical actuator and an in-flight operable bomb rack lock auxiliary release assembly. The linear electromechanical actuator consists of a spring-loaded plunger that is mechanically cocked and electrically released to provide the force that initiates hook release. The auxiliary release assembly provides a secondary method of release should the linear electromechanical actuator or its electrical system fail. The in-flight operable bomb rack lock mechanism consists of a remotely controlled bomb rack lock and emergency release auxiliary unlock.

Parent Rack	Type	Aircraft
Aero 7A	Ejector	A-4 Series, A-6
Aero 7B	Ejector	A-6
MK 8 Shackle	Free-Fall	SH-2, SH-3
BRU-11A/A, BRU-11A/B	Ejector	S-3B
BRU-12/A	Free-Fall	P-3, OV-10
EUR-119	Ejector	T-45
BRU-14/A	Free-Fall	P-3, S-3, SH-60
BRU-15/A	Free-Fall	P-3
Aero 20B	Ejector	A-4
BRU-20/A, -21/A, -22/A, -23/A	Ejector	AH-1, UH-1
Talley Rack	Ejector	AH-1W
BRU-32/A	Ejector	F-14A/B/D, F/A-18
BRU-36A/A	Ejector	AV-8B
Accessory Suspension Equipment	Type	Aircraft
BRU-33A/A	Ejector	F/A-18
BRU-41 (IMER)	Ejector	A-4, A-6, AV-8, F/A-18, F-4, S-3
BRU-42 (ITER)	Ejector	A-4, A-6, AV-8, F-14A/B/D, F/A-18, F-4, S-3
A/A37B-3 (PMBR)	Free-Fall	T-45

Figure 7-1-1. Bomb Racks

7.1.6.7 BRU-15/A Bomb Rack. The BRU-15/A parent bomb rack is a modification of the BRU-14/A bomb rack. The BRU-15/A bomb rack is used on the wing stations of the P-3B and P-3C aircraft in conjunction with the aircraft wing store launcher assembly modified to launch a HARPOON missile and other authorized stores. Aero 1A adapter assemblies may be attached to increase the bomb rack to 30-inch suspension capability.

7.1.6.8 Aero 20B Bomb Ejector Rack. The Aero 20B ejector rack is a parent rack which consists of a housing assembly that is equipped with a dual breech, an ejector mechanism, two weapon suspension hooks spaced 14 inches apart, two arming solenoids, four adjustable sway braces, and a mechanical linkage which connects the hook sears to the piston assembly.

7.1.6.9 BRU-20/A, -21/A, -22/A and -23/A Bomb Ejector Racks. The BRU-20/A and BRU-21/A bomb ejector racks are utilized on the UH-1N aircraft since the incorporation of the A/A49E-11 Defensive Armament System (DAS). The DAS enables the UH-1N aircraft to carry and fire the LAU-61 and LAU-68 rocket pods. The BRU-21/A and BRU-23/A bomb ejector racks are used on the AH-1W aircraft. The BRU-22/A bomb ejector rack is mounted on the inboard port side and the BRU-23/A bomb ejector rack is mounted on the inboard starboard side of the aircraft respectively.

7.1.6.10 BRU-32/A Bomb Ejector Rack. The BRU-32/A bomb ejector rack is a parent rack which provides for the carriage of single stores, BRU-33A/A bomb ejector racks, and missile launchers. The BRU-32/A is fitted with both 14- and 30-inch suspension hooks. The BRU-32/A features a safety interlock and automatic sway bracing. Sensing switches are incorporated to provide bomb rack status information (loaded or unloaded) to the cockpit. The primary ejection unit uses two cartridges to generate gas pressure for rack operation. The auxiliary release unit uses one cartridge, which opens the hooks should the primary ejection mode fail allowing the store to free fall from the aircraft.

7.1.6.11 BRU-33A/A Bomb Ejector Rack. The BRU-33A/A is an accessory rack which attaches to the parent BRU-32/A bomb ejector rack and is used to carry two stores weighing up to 1,000 pounds each. Each ejection unit utilizes a 14-inch suspension hook and provides a special safety interlock and automatic sway bracing. The special safety interlock mechanically prevents the ejection units from opening. The BRU-33A/A CVER incorporates ejector units which are

canted 5 degrees outboard to accommodate large diameter stores.

7.1.6.12 BRU-36A/A Bomb Ejector Rack. The BRU-36A/A bomb ejector rack is a parent rack which provides for the carriage of single stores, ITERs, or rack-suspended missile launchers using 14-inch suspension hooks. Features of the BRU-36A/A include a safety interlock and variable ejection force control. The safety interlock mechanically prevents opening of the rack and also locks and unlocks the rack during loading operations. Adjustable sway braces are also incorporated to brace stores, racks, and launchers. Sensing switches are incorporated to indicate to the stores management processor that a store is aboard or has been released.

7.1.6.13 BRU-12/A Bomb Rack. The BRU-12/A bomb rack is a parent rack which may be mounted in the bomb bay of all models of the P-3 aircraft. It is similar in design and operation to the Aero 65A series bomb rack.

7.1.6.14 Talley Rack. The Talley Rack is a parent rack attached to the outboard stations of the AH-1W aircraft, they provide for the attachment and carriage of TOW missile launchers and external weapons and stores with 14-inch suspension. The Talley rack is attached to the aircraft by means of a hydraulic actuated mounted bracket. When TOW Missile Launchers (TML) are attached, the mounting bracket articulates the Talley rack which enables movement of the TML to aid in target acquisition. Each Talley rack consists of a housing assembly that contain the electrical wiring, ejector breeches and mechanical linkage that are activated when the dual cartridges are fired. The Talley rack also contains electromechanical arming units, and four adjustable sway braces.

7.1.7 Guided Missile Launchers. Guided missile launchers provide for the carriage and release of guided missiles from an aircraft. They provide the mechanical and electrical interface between the aircraft and the air launched missile. Guided missile launchers are categorized as either ejection type or rail launchers. Ejection type launchers utilize gas pressure generated by cartridges fired in the launcher breeches to physically separate the missile from the aircraft. The missile motor is then ignited at a predetermined distance below the aircraft. Rail launchers are normally carried on the wing stations. Rail launchers enable the missile motor to be activated while the missile is still attached to the launcher. After motor fire, the thrust generated by the motor overcomes the missile restraining device and the missile separates from the aircraft. The tube launcher is a variant of the rail launcher. Tube type launchers contain the missile in launcher tubes until the missile motor is ignited. The missile then fires from the tube in a manner similar to firing aircraft-mounted rockets. Figure 7-1-2 provides a listing of the guided missile launchers currently in use and identifies their

application and the type of release mechanism employed. A brief description of the launchers is provided in paragraphs 7.1.7.1 through 7.1.7.14.

7.1.7.1 LAU-7/A Guided Missile Launcher. The LAU-7/A launcher provides a complete launching system for the SIDEWINDER and SIDEARM missiles. The launcher is comprised of four major assemblies: the housing assembly, nitrogen receiver assembly, mechanism assembly, and power supply; and the following lesser assemblies: the forward fairing assembly, umbilical hook support assembly, fin retainer assemblies, aft snubber mount fitting assembly, aft fairing latch assembly, and forward and aft pylon adapter assemblies. The housing assembly is the main structural member of the launcher. It houses the remaining assemblies and includes provisions for mounting the launcher to the aircraft.

7.1.7.2 LAU-92 Guided Missile Launcher. The LAU-92 guided missile launcher carries and launches AIM-7 SPARROW missiles from the F-14 aircraft. The launcher is a self-contained, gas-operated, missile-ejector mechanism which is initiated by the electrical ignition of two impulse cartridges. The launcher consists of a beam subassembly, missile release subsystem, forward and aft missile ejector assemblies, breech assembly, missile motor fire switch assembly, electrical subsystem, and structural hardware. The launcher is installed in semi recessed fuselage stations and is raised or lowered with a hoist assembly and retained in the up position by means of four hooks operated by a latch mechanism. By using the LAU-92 adapter, the launcher can also be installed on a multipurpose pylon on stations 1 and 8. A modified LAU-92 will be utilized as the ejector launcher on the F-14 aircraft to launch the AIM-120 AMRAAM missile. (This modified LAU-92 may receive a new designations).

7.1.7.3 LAU-93 Guided Missile Launcher. The LAU-93 guided missile launcher is used for carriage and ejection launch of the PHOENIX missile from the F-14A/B aircraft. The launcher provides mechanical, electrical, and liquid coolant interface between the aircraft and the missile. The mechanical components of the launcher consist of a gas-operated, hook-opening linkage and two ejectors, a ground safety lock and positive launch pin, and coolant and electrical umbilicals. By using the LAU-93 adapter, the LAU-93 launcher can be attached to a multipurpose pylon. Launchers may also be installed on weapons rails for fuselage carriage of the AIM-54.

7.1.7.4 LAU-132 Guided Missile Launcher. The LAU-132 guided missile launcher is similar in appear-

ance and operation to the LAU-93 launcher. The LAU-132 was developed for carriage and launch of the AIM-54C PHOENIX missile from the F-14D aircraft.

7.1.7.5 LAU-115/A and LAU-115A/A Guided Missile Launchers. LAU-115/A and LAU-115A/A are rail launchers designed for carriage and launch of AIM-7 missiles from F/A-18 aircraft. The launcher is suspended from the BRU-32 bomb rack on wing stations. The LAU-7 launchers or LAU-127 launchers may be attached to the sides of the LAU-115 for carriage of AIM-9 or AIM-120 missiles. The LAU-115 requires use of a jettison adapter (ECP-422) for safe separation of the LAU-115/LAU-127/AMRAAM when jettison as a package.

7.1.7.6 LAU-116/A and LAU-116A/A Guided Missile Launchers. The LAU-116/A provides for the carriage and launch of the AIM-7 series SPARROW missile from the F/A-18A aircraft. The LAU-116A/A is also capable of launching the AIM-120 AMRAAM missile. Two launchers, one left hand and one right hand, are installed in the underside of the aircraft fuselage at stations 4 and 6. The launchers are recessed in cavities within the aircraft fuselage, allowing the missiles to be semi recessed for aerodynamic purposes. Both versions of the LAU-116 are ejection launchers.

7.1.7.7 LAU-117/A(V)2/A Guided Missile Launcher. The LAU-117/A(V)2/A guided missile launcher is designed to carry and launch the AGM-65 MAVERICK missile. The LAU-117/A(V)2/A is delivered to the organizational level mated to the MAVERICK as a preloaded accessory suspension equipment combination which is then attached to the aircraft's parent bomb rack. The LAU-117/A(V)2/A may be configured for either 14- or 30-inch suspension which is determined by the aircraft's parent bomb rack.

7.1.7.8 LAU-118/AL(v)1/A Guided Missile Launcher. The LAU-118/A guided missile launcher provides the mechanical and electrical interface between the aircraft and the AGM-88A HARM missile. The LAU-118/A is delivered to the organizational level mated to the HARM missile as a preloaded accessory suspension equipment combination which is then attached to the aircraft's parent bomb rack. The LAU-118/A can be configured with either 14- or 30-inch suspension.

7.1.7.9 LAU-127/A. The LAU-127A is a rail launcher designed for carriage and launch of AIM-120 or AIM-9 missiles from F/A-18C/D aircraft. Other aircraft may be cleared for use in the future.

7.1.7.10 M272/M299 Guided Missile Launcher. The M272 and M299 guided missile launchers provide carriage and launch of the HELLFIRE missile from the AH-1 and H-60 aircraft. The M272 is attached to the parent bomb rack of the AH-1W aircraft and the M299 is attached to the left-

hand extended pylon of the H-60 series aircraft and may carry up to four HELLFIRE missiles. A short cable provides electrical connection from the aircraft to the launcher. This cable runs from the aircraft pylon to the umbilical connector on the top of the electronic command signal programmer and is part of the aircraft wiring harness. Electrical connection to the missile is via the electronic command signal programmer to the launcher rail wiring harness.

7.1.7.11 TOW Missile Launcher. The TOW missile launcher is used on the AH-1 series aircraft to carry and launch the TOW missile. The launcher carries two missiles, one on each side of its main frame, secured in position by a hinged center gate. The launchers can be mounted two high to provide a total of four missiles on each side of the aircraft. The launcher keeps the missiles electronically isolated from the aircraft armament system until the pilot initiates the launch command. The launcher is fitted with a debris director assembly, designed to direct the missile launch debris away from the aircraft rotor blades.

7.1.7.12 PENGUIN. Missile Launcher Assembly. The Missile Launcher Assembly (MLA) is an aircraft armament subsystem providing the electrical and mechanical interface between the missile, and the SH-60B LAMPS MK III Helicopter. The MLA attaches to the Helicopter Pylon and consists of a modified BRU-14 Bomb Rack, two AERO-1A adapters, a Missile Control System (MCS), and a forward and aft fairing covering the MCS. The MCS provides the electrical interface between the helicopter and the missile to control the transfer of target data and electrical power during captive flight. The MCS contains an alignment power unit cable, a missile power unit, interconnecting cables, a wing lanyard assembly, an umbilical cable, an umbilical release unit, and an alignment unit.

7.1.8 Maintenance Philosophy. The maintenance philosophy for aircraft inventory material and mission-oriented aircraft armament equipment is described below.

7.1.8.1 All guided missile launchers and bomb racks require maintenance at organizational and intermediate levels and most require maintenance at the depot level. The depth of maintenance and repair to be preformed at fleet levels is determined by factors such as available manpower, skill levels, complexity, support equipment requirements, parts and cost. Newer armament equipment is designed to be fully maintainable at intermediate levels, and some require depot repair only on major assemblies. Maintenance plans outline the authorized repairs and required maintenance tasks, frequencies and levels, and are the basic source documents for NAVAIR technical manuals. Source, maintenance and recoverability (SM&R) codes are assigned to the end item

launcher or bomb rack and to major assemblies and piece parts within the end item. These codes are listed in the illustrated parts breakdown section of each technical manual and readily tell the user if the part/assembly is stocked, manufactured or assembled at which maintenance level; who uses the item, who repairs the item, and who has disposal authority.

7.1.8.2 Aircraft Inventory. Aircraft Inventory Items (Parent Bomb Racks or Launchers) remain installed in squadron aircraft until scheduled or unscheduled maintenance is required, at which time the item is removed and sent to intermediate level for inspection and repair. Mission oriented items for all supported squadrons are maintained at the intermediate level armament equipment pool until called for to fill organizational level mission requirements/squadrons retain custody until the item is no longer required or a failure occurs. Intermediate level inspects, repairs, test, and reissues or places the item in ready for service storage.

7.1.8.3 All maintenance is performed in accordance with the approved COMNAVAIRSYSCOM maintenance instruction manuals and Maintenance Requirement Record (MRC) (NAVAIR 4790/3) developed for each unique application of the aircraft armament equipment item. MRCs are an element of the phased maintenance program and provide the instructions for efficient performance of scheduled maintenance tasks. Each MRC contains the tasks relating to a particular system, subsystem, area, or component, using a logical sequence for accomplishment. MRCs identify the recommended rating or military occupation specialty, performance interval, and the work area involved. MRCs also identify support equipment, consumables, replacement parts, and assistance requirements for task performance. Illustrations, clearances, tolerances, charts, part numbers, and other pertinent information are included where necessary. MRCs do not include instructions for repair, or calibration, or procedures for correcting defective conditions. Figure 7-1-3 lists the applicable authorized aircraft armament equipment technical publications.

7.1.9 Scheduled Removal Component Card and Equipment History Record Cards

7.1.9.1 A Scheduled Removal Component (SRC) card (OPNAV 4790/28A) and an Equipment History Record (EHR) card (OPNAV 4790/113) accompany each aircraft armament equipment item and serve as the administrative means of providing managers with aircraft armament equipment status, operational history, modification, configuration, and transfer and receiving accounting data. Appendix H contains examples of SRC and EHR cards and also provides instructions for completing the forms.

Launcher	Missile	Type	Aircraft
LAU-7/A	AIM-9 SIDEWINDER/ AGM-122 SIDEARM	Rail	A-4, A-6, AH-1, AV-8, F-14, F/A-18, OV-10
LAU-92B/A	AIM-7 SPARROW	Ejector	F-14A/B
LAU-92 MOD	AIM-120 AMRAAM	Ejector	F-14A/B
LAU-93B/A	AIM-54A PHOENIX/ AIM-54C PHOENIX	Ejector	F-14A/B
LAU-132	AIM-54C PHOENIX	Ejector	F-14D
LAU-115/A	AIM-7 SPARROW	Rail	F/A-18
LAU-115A/A	AIM-9 SIDEWINDER	Rail	F/A-18
LAU-116/A	AIM-7 SPARROW	Ejector	F/A-18
LAU-116A/A	AIM-120 AMRAAM	Ejector	F/A-18
LAU-117/A(V)2/A	AGM-65 MAVERICK	Rail	A-4, A-6, AV-8, F/A-18
LAU-118/A	AGM-88 HARM	Rail	A-6, EA-6B, F/A-18
LAU-127A/A	AIM-120 AMRAAM/ AIM-9 SIDEWINDER	Rail	F/A-18
M272	AGM-114 HELLFIRE	Rail	AH-1W
M299	AGM-114 HELLFIRE	Rail	AH-1W, H-60, SH-60B, SH-60F
TML	BGM-71A (TOW)	Tube	AH-1W
MLA	AGM-119B PENGUIN	Free Fall	SH-60B
LAU-138	AIM-9/Chaff	Rail	F-14

Figure 7-1-2. Guided Missile Launchers

7.1.9.2 SRC Cards. SRC cards are used for recording maintenance history, installation, and usage data. They are maintained as part of the logbook, aeronautical equipment service record, and module service record as long as the component is installed. When the component is removed from the aircraft or equipment, the SRC card accompanies the component. Continuity of this maintenance history is paramount.

7.1.9.3 EHR Cards. EHR cards provide a method of monitoring specific maintenance data on designated aeronautical components and equipment that do not qualify for an SRC card. An individual EHR card is maintained for each serialized item as part of the logbook, aeronautical equipment service record, and module service record while the component is installed. When the component is removed from the aircraft or equipment, the EHR card will be attached to and accompany the component to its final destination. EHR cards that pertain to those items that are constantly being removed or installed for the purpose of aircraft mission configuration, may be maintained at the intermediate level and need not accompany the item during temporary squadron use. Logbook and aeronautical equipment service record and inventory record entries are not required.

7.1.9.4 The SRC and EHR provide a complete history of the aircraft armament equipment. They reflect all maintenance actions that have been performed during the aircraft armament equipment item's life cycle at each maintenance level. These records are maintained at the maintenance level

that has current custody of the aircraft armament equipment and are transferred with the aircraft armament equipment. The SRC and EHR for all aircraft armament equipment will be maintained in accordance with the applicable authorized maintenance instruction manual.

7.1.10 Record Keeping and Reporting

7.1.10.1 Aircraft armament equipment is fleet-controlled material. Aircraft armament equipment items are controlled and tracked by aircraft armament equipment pool custodians assigned by the type commander. Message reporting requirements of aircraft armament equipment asset transactions and periodic inventory reports serve to keep these inventory managers informed as to asset numbers, locations, attrition, and shortfalls. In turn, these commands report consolidated asset status data directly to COMNAVAIRSYSCOM (AIR-3.1) with an information copy to Naval Ammunition Logistics Center (NALC) Philadelphia, PA.

7.1.10.2 Quarterly worldwide inventory reports of aircraft armament equipment shall be sent to COMNAVAIRSYSCOM (AIR-3.1) by unclassified naval message with an information copy sent to NALC Philadelphia, PA. NALC peculiar armament equipment inventory report provides data for the preparation of an aircraft armament equipment net asset requirements matrix which is used to update the annual program objective memorandum. Detailed requirements are contained in Volume II, section 7, chapter 7.6.

Aircraft Armament Equipment	Aircraft Application	NAVAIR Loading Manual	Maintenance Instruction Manual	IPB	Maintenance Level		
					O	I	D
AERO-7A/7B			11-5D-20	X	X	X	X
AERO-20B	A-4	01-40AVM-75	11-5-130	X	X	X	X
BRU-11A/A	S-3	01-S3AAC-75	11-10C-20/24	X	X	X	X
BRU-12/A	P-3	01-75PA-75	11-5C-23	X	X	X	X
BRU-14/A	P-3 S-3 SH-60	01-75PA-75 01-S3AAC-75 A1-H60BB-LWS-000	11-5E-18	X	X	X	X
BRU-15A	P-3	01-75PA-75	11-5E-18 CHG.1	X	X	X	
BRU-20/A, 21/A, 22/A, 23/A,	UH-1 AH-1W	01-110HC-75 01-H1AAC-75	11-75-73	X	X	X	X
BRU-32/A	F/A-18 F-14	A1-F18AC-LWS-000 XXX	A1-F18AC-740-300 AW-382AC-750-000	X	X	X	
BRU-33A/A	F/A-18	A1-F18AC-LWS-000	A1-F18AC-740-300 AW-382AC-750-010	X	X	X	
BRU-36A/A	AV-8	A1-AV8B-LWS-000	A1-AV8B-750-300		X		
BRU-41 (I MER)	A-6 F/A-18	01-85AD-75 A1-F18AC-LWS-000	11-5-603	X	X	X	X
BRU-42 (I TER)	A-6 AV-8 F/A-18 S-3	01-85AD-75 A1-AV8B-LWS-000 A1-F18AC-LWS-000 01-S3AAA-75	11-5-603	X	X	X	X
LAU-7	A-4 A-6 AV-8 AH-1W F-14 F/A-18 S-3 SH-2 SH-60	01-40AVM-75 01-85AD-75 A1-AV8B-LWS-000 01-H1AAC-75 01-F14AAC-75 A1-F18AC-LWS-000 01-S3AAC-75 01-260HCD-75 A1-H60BB-LWS-000	11-75A-54	X	X	X	X
LAU-92	F-14A/B	01-F14AAC-75	11-75A-70	X	X	X	X
LAU-93	F-14A/B	01-F14AAC-75	11-75A-68	X	X	X	X

Figure 7-1-3. Technical Manual Matrix

Aircraft Armament Equipment	Aircraft Applica- tion	NAVAIR Loading Manual	Maintenance Instruction Manual	IPB	Maintenance Level		
					O	I	D
LAU-115	F/A-18	A1-F18AC-LWS-000	A1-F18AC-740-300 AW-394AC-750-000	X	X		X
LAU-116	F/A-18	A1-F18AC-LWS-000	A1-F18AC-740-300 AW-394AC-750-010	X	X	X	X
LAU-117	A-6 AV-8 F/A-18 P-3	01-85AD-75 A1-AV8B-LWS-000 A1-F18AC-LWS-000 01-75PA-75	A1-85ADF-2-6.1 A1-AV8BB-750-300 A1-F18AC-740-300 11-75A-79	 X	X X X		X
LAU-118	A-6 F/A-18	01-85AD-75 A1-F18AC-LWS-000	01-85ADF-2-6.1 A1-F18AC-740-300 11-75A-75	 X	X	X	
LAU-127	F/A-18	A1-F18AC-LWS-000	A1-F18AC-740-300 11-75A-514	X	X	X	
LAU-132	F-14	01-F14AAC-75	TBD				
MK-8 SHACKLE	SH-2 SH-3	01-260HCD-75 01-230HL-75	11-5-132	X	X	X	
MER-7	A-6 F/A-18	01-85AD-75 A1-F18AC-LWS-000	11-75A-57 11-75-73	X X	X X	X X	
TER-7	A-6 S-3	01-85AD-75 01-S3AAC-75	11-75A-57 11-75-73	X X	X X	X X	
TALLEY RACK	AH-1W	01-H1AAC-75	11-5E-19	X	X	X	X
TOW MSL LCHR	AH-1W	01-H1AAC-75	01-H1AAB-2-12 01-H1AAB-4	X	X	X	
M-272 HELLFIRE MSL LCHR	AH-1W	01-H1AAC-75	01-H1AAB-2-12 AW-394YB-MIB-000	X	X	X	
M299 HELLFIRE MSL LCHR	AH-1W / H-60	To Be Determined		X		X	
PENGUIN Missile Launcher Assembly	SH-60B	A1-H60BB-LW5-000	01-AGM-119B-2 Missile and Missile Control System As- sembly and Disassem- bly	X	X	X	X

Figure 7-1-3. Technical Manual Matrix (Cont'd)

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CHAPTER 7.2

Organizational Level Maintenance

7.2.1 General. This chapter discusses the maintenance actions assigned to the organizational level which are performed in support of the day-to-day operation of the unit. Organizational level maintenance is performed by aviation ordnance technicians assigned to organizational maintenance activities. Volume I chapter 2.3 of this manual describes the objectives and structure of these activities. Organizational level maintenance directly supports and maintains the aircraft weapon system, which consists of the aircraft, the airborne ordnance or ammunition, and the associated aircraft armament equipment.

7.2.2 Organizational Level Maintenance Responsibilities. Organizational level maintenance actions are tailored within the constraints of the organizational level's manpower and maintenance capabilities to ensure that assigned aircraft armament equipment is properly maintained. Organizational level maintenance actions for aircraft armament equipment are associated with routine aircraft operations and include time and event phased inspections, cleaning, minor corrosion control and prevention, and servicing. Figures 7-2-1 and 7-2-2 assign the organizational level maintenance actions that are performed on the aircraft armament equipment listed in chapter 7.1. The assigned maintenance actions are described generally in paragraphs 7.2.2.1 through 7.2.2.12. All maintenance actions are to be performed in accordance with approved Naval Air Systems Command (COMNAVAIRSYSCOM) Maintenance Instruction Manuals (MIMs) and maintenance requirement cards (NAVAIR 4790/3) which have been developed for each unique application of the aircraft armament equipment item.

7.2.2.1 Daily Inspections. Organizational level maintenance personnel perform daily inspections on aircraft and aircraft-installed armament equipment. Daily inspections ensure that all aircraft armament equipment on an aircraft is correctly installed and that all associated components, such as pylons, cables, and adapters, are present and properly configured. Daily inspections are mandatory and any discrepancies must be corrected before the aircraft is authorized for flight.

7.2.2.2 Periodic Inspections. Organizational level aviation ordnance personnel perform periodic aircraft armament equipment inspections at intervals determined

either by time or by equipment usage. Periodic inspections are conducted at intervals specified in the applicable authorized planned maintenance system publications, which consist of checklists, maintenance requirement cards (NAVAIR 4790/3), periodic maintenance information cards, and sequence control charts and cards established by direction of COMNAVAIRSYSCOM. The publications provide a basis for planning, scheduling, and complying with scheduled maintenance requirements. The requirements are scheduled with intervals such as calendar time, flight or operation hours, or number of cycles or events based on the predominant failure mode. By inspecting items at frequent intervals, corrosion and normal wear can be controlled and minor problems can be corrected before they become major problems.

7.2.2.3 Conditional Inspections. Organizational level aviation ordnance personnel perform conditional inspections when required due to a specific condition defined in the applicable authorized aircraft and suspension equipment MIM. Examples include inspections required if an item is mishandled or dropped from a certain height, the inspection required if an ejector rack is fired on the deck with the safety pin installed, or if a bomb rack is overloaded or overstressed. During conditional inspections, organizational level aviation ordnance personnel check for cracks, bends, or other damage to the aircraft armament equipment item. If inspection at the organizational level indicates that major damage has occurred, the aircraft armament equipment must be sent to the intermediate level maintenance activity.

7.2.2.4 Testing and Troubleshooting. When there is an apparent failure of an aircraft armament equipment item, organizational level aviation ordnance personnel troubleshoot the affected system to determine the cause of the failure. Troubleshooting includes retesting of a bomb or missile release system, checking connectors and connections for proper mating, checking a system for broken or loose wiring, or checking an internal component for proper operation. If the fault cannot be isolated and repaired, the affected aircraft armament equipment item must be removed from the aircraft and sent to intermediate level maintenance for repair. All troubleshooting actions are conducted in accordance with the applicable authorized aircraft and suspension equipment MIMs.

Bomb Rack	7.2.2.1 Daily Inspection	7.2.2.2 Periodic Inspection	7.2.2.3 Conditional Inspection	7.2.2.4 Testing and Troubleshooting	7.2.2.5 Minor Repair	7.2.2.6 Corrosion Prevention and Control
BRU-41/BRU-42	X	X	X	X	X	X
Aero 7A/7B	X	X	X	X	X	X
MK 8 Shackle	X	X	X	X	X	X
BRU-11A/A	X	X	X	X	X	X
Aero 65A	X	X	X	X	X	X
BRU-14/A	X	X	X	X	X	X
BRU-15/A	X	X	X	X	X	X
Aero 20/B	X	X	X	X	X	X
BRU-20/A thru BRU-23/A, and MAK-79	X	X	X	X	X	X
BRU-32/A	X	X	X	X	X	X
BRU-33/A	X	X	X	X	X	X
BRU-36/A	X	X	X	X	X	X
BRU-12/A	X	X	X	X	X	X

Figure 7-2-1. Organizational Level Maintenance Responsibilities for Bomb Racks

Bomb Rack	7.2.2.7 Aircraft/AAE Preparation/ Inspection	7.2.2.8 Release and Control System Check	7.2.2.9 Technical Directive Compliance	7.2.2.10 Discrepancy Reports	7.2.2.11 Inventory Reporting	7.2.2.12 AAE Records
BRU-41/BRU-42	X	X	X	X	X	X
Aero 7A/7B	X	X	X	X	X	X
MK 8 Shackle	X	X	X	X	X	X
BRU-11A/A	X	X	X	X	X	X
Aero 65A	X	X	X	X	X	X
BRU-14/A	X	X	X	X	X	X
BRU-15/A	X	X	X	X	X	X
Aero 20/B	X	X	X	X	X	X
BRU-20/A thru BRU-23/A, and MAK-79	X	X	X	X	X	X
BRU-32/A	X	X	X	X	X	X
BRU-33/A	X	X	X	X	X	X
BRU-36/A	X	X	X	X	X	X
BRU-12/A	X	X	X	X	X	X

Figure 7-2-1. Organizational Level Maintenance Responsibilities for Bomb Racks (Cont'd)

Guided Missile Launcher	7.2.2.1 Daily Inspection	7.2.2.2 Periodic Inspection	7.2.2.3 Conditional Inspection	7.2.2.4 Testing and Troubleshooting	7.2.2.5 Minor Repair	7.2.2.6 Corrosion Prevention and Control
LAU-7/A	X	X	X	X	X	X
LAU-92	X	X	X	X	X	X
LAU-92 (MOD)	X	X	X	X	X	X
LAU-93	X	X	X	X	X	X
LAU-132	X	X	X	X	X	X
LAU-115/A	X	X	X	X	X	X
LAU-115A/A	X	X	X	X	X	X
LAU-116/A	X	X	X	X	X	X
LAU-116A/A	X	X	X	X	X	X
LAU-117/A(V)2/A	X	X	X	X	X	X
LAU-118/A	X	X	X	X	X	X
LAU-127A/A	X	X	X	X	X	X
M272	X	X	X	X	X	X
M299	X	X	X	X	X	X
TML	X	X	X	X	X	X
MLA	X	X	X	X	X	X

Figure 7-2-2. Organizational Level Maintenance Responsibilities for Guided Missile Launchers

Guided Missile Launcher	7.2.2.7 Aircraft/AAE Preparation/ Inspection	7.2.2.8 Release and Control System Check	7.2.2.9 Technical Directive Compliance	7.2.2.10 Discrepancy Reports	7.2.2.11 Inventory Reporting	7.2.2.12 AAE Records
LAU-7/A	X	X	X	X	X	X
LAU-92	X	X	X	X	X	X
LAU-92 (MOD)	X	X	X	X	X	X
LAU-93	X	X	X	X	X	X
LAU-132	X	X	X	X	X	X
LAU-115/A	X	X	X	X	X	X
LAU-115A/A	X	X	X	X	X	X
LAU-116/A	X	X	X	X	X	X
LAU-116A/A	X	X	X	X	X	X
LAU-117/A(V)2/A	X	X	X	X	X	X
LAU-118/A	X	X	X	X	X	X
LAU-127A/A	X	X	X	X	X	X
M272	X	X	X	X	X	X
M299	X	X	X	X	X	X
TML	X	X	X	X	X	X
MLA	X	X	X	X	X	X

Figure 7-2-2. Organizational Level Maintenance Responsibilities for Guided Missile Launchers (Cont'd)

7.2.2.5 Minor Repair. Organizational level aviation ordnance personnel perform minor repairs on aircraft armament equipment items to correct problems identified during troubleshooting or inspection. Minor repairs include replacement of failed parts that can be changed without extensive disassembly of the item such as arming units, breeches, ejector pistons and nitrogen receivers. Minor repair is conducted in accordance with the applicable authorized aircraft and suspension equipment MIMs.

7.2.2.6 Corrosion Prevention and Control. Organizational level personnel perform routine corrosion prevention and control procedures on aircraft armament equipment items in squadron custody. Minor corrosion discovered during inspections can be removed using preventive maintenance procedures, found in applicable corrosion control manuals, including NAVAIR 01-1A-75 (Airborne Weapons and Associated Equipment, Consumable Material Applications and Hazardous Material Authorized Use List) (NOTAL). See volume I, section 4 for further details. Any aircraft armament equipment item displaying evidence of rough handling, damage, or major corrosion shall be removed and sent to intermediate level maintenance.

7.2.2.7 Aircraft and Aircraft Armament Equipment Preparation and Inspection. Prior to any loading evolution, the aircraft armament equipment must be prepared and inspected in accordance with the procedures contained in the applicable airborne weapons and stores loading manual for each aircraft. Organizational level maintenance personnel shall ensure that: (1) the aircraft is properly positioned and grounded; (2) impulse cartridges are removed from all stores stations; (3) armament switches are moved to the off, safe, or normal position; (4) bomb racks and missile launchers are inspected for proper configuration; and (5) sway braces and ejector units are adjusted to accommodate the stores which are to be loaded.

7.2.2.8 Release and Control System Checks. Organizational Integrated Weapons Team (IWT) members shall perform release and control system checks on aircraft armament equipment prior to weapons or stores loading, or after reconfiguration of the aircraft, and after any malfunction in the release and control system. Procedures for performing release and control system checks are contained in the applicable authorized airborne weapons or stores loading manual for each aircraft.

7.2.2.9 Technical Directives. Organizational level aviation ordnance personnel are responsible for assuring com-

pliance with aircraft armament bulletins or aircraft armament changes directed to that level.

7.2.2.10 Discrepancy Reports. Discrepancy reports are initiated at the organizational level when a discrepancy is discovered during the performance of any of the assigned organizational level maintenance actions. Discrepancy reporting procedures are contained in volume I chapter 4.6.

7.2.2.11 Inventory Reporting. Organizational maintenance activities are required to submit inventory reports listing quantities, condition, of aircraft armament equipment items in custody. The reports are routed to COMNAVAIR-SYSCOM through the chain of command as described in volume II, section 7, chapter 7.6. Reports are forwarded to the supporting intermediate level for consolidation and further forwarding to cognizant type commanders.

7.2.2.12 Aircraft Armament Equipment Records. Each aircraft armament equipment item has an accompanying document that serves as a complete history of the item. The documents may be a scheduled removal component card or equipment history record card. The documents are used to record all maintenance actions performed on the aircraft armament equipment item at each maintenance level and to record the completion of scheduled maintenance. The records are maintained by the maintenance activity having custody of the aircraft armament equipment and are transferred with the item.

7.2.3 Explosives Handling Personnel Qualification and Certification (Qual/Cert) Program. Organizational level personnel involved with the maintenance of aircraft armament equipment whose duties involve handling explosive ordnance must be trained, qualified, and certified to perform these actions in accordance with the requirements of OPNAVINST 8020.14/MCO P8020.11 (NOTAL) or MCO 8023.3 (NOTAL) and applicable type commander instructions.

7.2.4 Maintenance Training Requirements. Maintenance training is a continuous and ongoing process, conducted to ensure that personnel who operate, maintain, and support weapons systems and associated equipments are qualified to perform their respective functions. Formal and on-the-job maintenance training, for aircraft armament equipment processed at Organizational level maintenance activities, may be augmented through the use of Engineering Technical Specialists/Fleet Weapons Support Team provided by the Naval Air Warfare Center, Weapons Division, Point Mugu, CA. Volume I, chapter 4.4 provides procedures for requesting field service training and technical assistance. Volume I, section 6 provides additional information on all aspects of Naval Airborne Weapons Maintenance Training.

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CHAPTER 7.3

Intermediate Level Maintenance

7.3.1 General. This chapter describes the maintenance actions assigned to Intermediate Maintenance Activities (IMA). Intermediate level maintenance is authorized and designated to be performed by naval air stations, shipboard weapons departments, and marine aviation logistics squadrons at Marine Corps air stations. All IMAs shall perform intermediate maintenance functions on supported aircraft armament equipment as described in volume I, section 2, chapter 2.3 of this manual.

7.3.2 Intermediate Level Maintenance Responsibilities. IMAs perform higher level maintenance actions on aircraft armament equipment in support of the organizational level. Intermediate level maintenance for aircraft armament equipment includes those inspection, repair, and technical directive incorporation functions which are beyond the organizational level's capability but which do not necessitate depot level support. All maintenance actions are to be performed in accordance with the applicable authorized Naval Air Systems Command Maintenance Instruction Manuals (MIM) shown in volume II, section 7, figure 7-1-3, and NAVAIR 01-1A-75 (Airborne Weapons and Associated Equipment, Consumable Material Applications and Hazardous Material Authorized Use List) (NOTAL). Aircraft armament equipment inducted into an IMA must be inspected immediately to ensure that all cartridges and nitrogen receivers have been removed and that the aircraft armament equipment is completely safe. The receiving IMA must also ensure that scheduled removal component cards or equipment history record cards received with the aircraft armament equipment are current and accurate. Paragraphs 7.3.2.1 through 7.3.2.13 describe those maintenance actions that the IMAs are responsible for performing, on the aircraft armament equipment listed in chapter 7.1. Figures 7-3-1 and 7-3-2 assign the intermediate maintenance actions that are performed on the aircraft armament equipment listed in chapter 7.1. Equipment configuration and electrical and mechanical system checks will only be performed on these items: triple ejector rack, improved multiple ejector rack, and improved triple ejector rack, BRU-33/A, Aero 5A, LAU-117/A, LAU-118/A, M272 and M299.

7.3.2.1 Special Inspections. Intermediate level maintenance personnel perform special aircraft armament equipment inspections at intervals determined either by time or by equipment usage. Special inspections are conducted at intervals specified in the applicable authorized aircraft or suspension equipment planned maintenance system publications, which include checklists, maintenance requirement cards (NAVAIR 4790/3), periodic maintenance information cards, and sequence control charts and cards established by direction of the COMNAVAIRSYSCOM. These publications provide a basis for planning, scheduling, and complying with scheduled maintenance requirements. The requirements are scheduled with intervals such as calendar time, flight or operation hours, or number of cycles or events based on the predominant failure mode. When an item of aircraft armament equipment becomes due for a special inspection that is beyond the capability of organizational level maintenance, the aircraft armament equipment item is removed from the aircraft and sent to the IMA which inducts the item and performs the required inspection.

7.3.2.2 Conditional Inspections. Intermediate level maintenance personnel perform conditional inspections when a specific condition, defined in the applicable equipment MIM. During conditional inspections, intermediate level maintenance personnel check for, or other damage that may have occurred.

7.3.2.3 Corrosion Prevention and Control. Intermediate level maintenance personnel perform routine corrosion prevention, control, and preservation actions in accordance with the NAVAIR 01-1A-75 Airborne Weapons and Associated Equipment Consumable Material Applications and Hazardous Material Authorized use List (NOTAL). Corrosion control actions at intermediate level maintenance include stripping of external paint, corrosion control treatment of metal surfaces, priming, painting, and restenciling. Prior to shipment or storage of aircraft armament equipment, it must be prepared and packaged in accordance with the applicable authorized MIM. The scheduled removal card or equipment history card shall be filled out and attached to the equipment.

Bomb Rack	7.3.2.1 Special Inspec- tions	7.3.2.2 Conditional Inspections	7.3.2.3 Corrosion Prevention and Control	7.3.2.4 Preservation	7.3.2.5 Testing/ Trouble-shooting	7.3.2.6 Repair
BRU-41/BRU-42	X	X	X	X	X	X
Aero 7A/7B	X	X	X	X	X	X
MK 8 Shackle	X	X	X	X	X	X
BRU-11A/A	X	X	X	X	X	X
Aero 65A	X	X	X	X	X	X
BRU-14/A	X	X	X	X	X	X
BRU-15/A	X	X	X	X	X	X
Aero 20/B	X	X	X	X	X	X
BRU-20/A thru BRU-23/A	X	X	X	X	X	X
BRU-32/A	X	X	X	X	X	X
BRU-33A/A	X	X	X	X	X	X
BRU-36A/A	X	X	X	X	X	X
BRU-12/A	X	X	X	X	X	X
A/A37B-5E A/A37B-6E	X	X	X	X	X	X

Figure 7-3-1. Intermediate Level Maintenance Responsibilities for Bomb Racks

Bomb Rack	7.3.2.7 Equipment Configuration	7.3.2.8 Electrical/Mechanical System Check	7.3.2.9 Technical Directives	7.3.2.10 Inventory Reporting	7.3.2.11 Discrepancy Reports	7.3.2.12 Maintenance Data Reporting	7.3.2.13 AAE Records
BRU-41/ BRU-42	X	X	X	X	X	X	X
Aero 7A/7B			X	X	X	X	X
MK 8 Shackle			X	X	X	X	X
BRU-11A/A			X	X	X	X	X
Aero 65A			X	X	X	X	X
BRU-14/A			X	X	X	X	X
BRU-15/A			X	X	X	X	X
Aero 20/B			X	X	X	X	X
BRU-20/A thru BRU-23/A			X	X	X	X	X
BRU-32/A			X	X	X	X	X
BRU-33A/A	X	X	X	X	X	X	X
BRU-36A/A			X	X	X	X	X
BRU-12/A			X	X	X	X	X
A/A37B-5E A/A37B-6E	X	X	X	X	X	X	X

Figure 7-3-1. Intermediate Level Maintenance Responsibilities for Bomb Racks (Cont'd)

Guided Missile Launcher	7.3.2.1 Special Inspections	7.3.2.2 Conditional Inspections	7.3.2.3 Corrosion Prevention and Control	7.3.2.4 Preservation	7.3.2.5 Testing/Trouble shooting	7.3.2.6 Repair	7.3.2.7 Equipment Configuration
Aero 7/A	X	X	X	X	X	X	
LAU-7/A	X	X	X	X	X	X	
LAU-92	X	X	X	X	X	X	
LAU-92 (MOD)	X	X	X	X	X	X	
LAU-93	X	X	X	X	X	X	
LAU-132	X	X	X	X	X	X	
LAU-138	X	X	X	X	X	X	
LAU-115/A	X	X	X	X	X	X	
LAU-115A/A	X	X	X	X	X	X	
LAU-116/A	X	X	X	X	X	X	
LAU-116A/A	X	X	X	X	X	X	
LAU-117/A(V)2/A	X	X	X	X	X	X	X
LAU-118/A	X	X	X	X	X	X	X
LAU-127A/A	X	X	X	X	X	X	
M272	X	X	X	X	X	X	X
M299	X	X	X	X	X	X	X
TML	X	X	X	X	X	X	
MLA	X	X	X	X	X	X	X

Figure 7-3-2. Intermediate Level Maintenance Responsibilities for Guided Missile Launchers

Guided Missile Launcher	7.3.2.8 Electrical/ Mechanical System Check	7.3.2.9 Tech Directives	7.3.2.10 Inventory Reporting	7.3.2.11 Discrepancy Reports	7.3.2.12 Maintenance Data Reporting	7.3.2.13 AAE Records
Aero 7/A		X	X	X	X	X
LAU-7/A	X	X	X	X	X	X
LAU-92		X	X	X	X	X
LAU-92 (MOD)		X	X	X	X	X
LAU-93		X	X	X	X	X
LAU-132		X	X	X	X	X
LAU-138	X	X	X	X	X	X
LAU-115/A		X	X	X	X	X
LAU-115A/A		X	X	X	X	X
LAU-116/A		X	X	X	X	X
LAU-116A/A		X	X	X	X	X
LAU-117/A(V)2/A	X	X	X	X	X	X
LAU-118/A	X	X	X	X	X	X
LAU-127A/A		X	X	X	X	X
M272	X	X	X	X	X	X
M299	X	X	X	X	X	X
TML		X	X	X	X	X
MLA			X	X	X	X

**Figure 7-3-2. Intermediate Level Maintenance Responsibilities
for Guided Missile Launchers (Cont'd)**

7.3.2.4 Preservation. Aircraft armament equipment shall be properly packaged and preserved at all IMA's when not used/issued for a period of 30 days or more. IMA ordnance officers may authorize deviation from this policy, when known operational requirements exist (not to exceed 90 days). Preservation entry shall be made by IMA personnel in section IV of the Equipment History Record (EHR) or section V of the Scheduled Removal of Component (SRC) card as applicable. Item part number and serial number shall be annotated on a Ready For Issue (RFI) tag and attached to the outside of the barrier paper. Aircraft armament equipment in the custody of a prime custodian is accumulating time for calendar inspection unless properly preserved for non-aging with corresponding depot or intermediate level entry on the applicable EHR or SRC card. Aircraft armament equipment packaged/preserved by a prime custodian is considered to be in non-aging status. Aircraft armament in the custody of O-level activities will be in an aging status for scheduled calendar inspections. All prime pool custodian's will establish and maintain wrapping, packaging and preservation capabilities/procedures for all applicable AAE. When feasible, AAE shall be preserved and packaged per MIL-P-116H (NOTAL).

7.3.2.5 Testing and Troubleshooting. Testing and troubleshooting procedures are performed by intermediate level aviation ordnance personnel to determine the extent of maintenance and various repair actions required to return an aircraft armament equipment item to ready-for-issue status. Test and inspection criteria described in the applicable authorized aircraft and suspension equipment technical manual specify the procedures used to identify the nature and extent of any defects or damage to the aircraft armament equipment which would require repair actions to be performed. These procedures include visual inspections, electrical testing of circuits and components, and non-destructive testing using liquid penetrants, magnetic particles, or ultrasonic equipment to determine the structural integrity of an aircraft armament equipment item.

7.3.2.6 Repair. Intermediate level aviation ordnance personnel perform repairs on aircraft armament equipment items found defective during testing, troubleshooting, or inspection. Major repairs include replacement of broken or worn parts, rewiring electrical harnesses, replacing electrical receptacles and plugs, and replacement of major system components. Most IMAs also have the capability of performing microminiature electronic repair functions on aircraft armament equipment items such as circuit boards, and other electronic components. All repair actions are conducted in accordance with the applicable authorized aircraft and suspension equipment MIM.

7.3.2.7 Equipment Configuration. Mission-oriented aircraft armament equipment, such as multiple and triple ejector racks MAVERICK, and HARM guided missile launchers, are maintained in an intermediate level maintenance rotatable pool. When a squadron turns in a multiple ejector rack or triple ejector rack to the IMA for maintenance, a replacement item is removed from the pool, inspected, and configured with the appropriate adapter kits for the type of aircraft it will be installed on. When a squadron requests a MAVERICK, or HARM guided missile from the supporting IMA, intermediate level personnel break out a launcher for the type of missile to be loaded and configure the launcher for the type of aircraft it will be loaded on.

7.3.2.8 Electrical and Mechanical System Check. Intermediate level aviation ordnance personnel perform systems checks to verify the proper electrical and mechanical operation of mission-oriented aircraft armament equipment before issue to an organizational level activity. Systems checks are performed by intermediate level aviation ordnance personnel using electronic test equipment to check electrical circuits and mechanical test equipment such as hydraulic detent testers to test launcher restraint devices. Upon successful completion of required tests, the aircraft armament equipment is ready-for-issue to the user activity. All electrical and mechanical checks are performed in accordance with the applicable authorized MIM.

7.3.2.9 Technical Directives. Intermediate level aviation ordnance personnel are responsible for assuring that aircraft armament bulletins or aircraft armament changes directed to that level.

7.3.2.10 Inventory Reporting. Intermediate level maintenance activities are required to submit periodic inventory reports listing quantities, condition, and serial numbers of aircraft armament equipment items in custody. These reports are routed to COMNAVAIRSYSCOM through the chain of command as described in volume II, section 7, chapter 7.6.

7.3.2.11 Discrepancy Reports. Discrepancy reports are initiated by intermediate level aviation ordnance personnel when a discrepancy is discovered during the performance of any of the assigned intermediate level maintenance actions. Discrepancy reporting procedures are contained in volume I, section 4, chapter 4.6.

7.3.2.12 Maintenance Data Reporting. The maintenance data system is a management information system designed to provide statistical data for use at all management levels. The maintenance data system was developed as an integral part of the Naval Aviation Maintenance and Material Management (AV-3M) system and provides the input to furnish

data products which provide management tools for the efficient and economical management of maintenance organizations. When performing a maintenance action, intermediate level aviation ordnance personnel convert a narrative description of the job into codes and enter the coded information on standard forms or source documents. These source documents are collected and transmitted to a data services facility where the information is converted to machine records. The data services facility then uses the machine records to produce periodic report listings summarizing the submitted data. The reports are supplied to ordnance supervisors to provide assistance in planning and directing the maintenance effort. In addition, this information is forwarded to the NAVAMMOLOGCEN, Mechanicsburg, PA, which has been designated as the central data processing facility.

7.3.2.13 Aircraft Armament Equipment Records. The scheduled removal component card or equipment history record for each aircraft armament equipment item inducted into an intermediate level maintenance activity will be screened for currency and accuracy upon receipt of the item. All maintenance performed on the aircraft armament equipment item while in the custody of the IMA will be entered into the record for that item. The record will be transferred with the aircraft armament equipment when it is returned to

the supply system or sent to a depot level maintenance activity.

7.3.3 Explosives Handling Personnel Qualification and Certification (Qual/Cert) Program. Intermediate level aviation ordnance personnel involved with the maintenance of aircraft armament equipment, whose duties involve handling explosive ordnance, must be trained, qualified, and certified to perform these actions in accordance with the requirements of OPNAVINST 8020.14/MCO P8020.11 (NOTAL) or MCO 8023.3 (NOTAL) and appropriate type commander instructions.

7.3.4 Maintenance Training Requirements. Maintenance training is a continuous and ongoing process, conducted to ensure that personnel who operate, maintain, and support weapons systems and associated equipments are qualified to perform their respective functions. Formal and on-the-job maintenance training, for aircraft armament equipment processed at Intermediate level maintenance activities, may be augmented through the use of Engineering Technical Specialists/Fleet Weapons Support Team provided by the Naval Air Warfare Center, Weapons Division, volume I, chapter 4.4 provides procedures for requesting field service training and technical assistance. Volume I, section 6 provides additional information on all aspects of Naval Airborne Weapons Maintenance Training.

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CHAPTER 7.4

Depot Level Maintenance

7.4.1 General. This chapter discusses the maintenance actions assigned to depot level maintenance activities. Depot activities perform maintenance on aircraft armament equipment that is beyond the maintenance capability of intermediate maintenance activities. Depot level activities support the organizational and intermediate levels by providing technical assistance in carrying out those functions which are beyond the responsibility or capability of organizational level and intermediate level activities through the use of more extensive facilities, skills, and materials. Depot level functions are carried out in industrial establishments or in the field by personnel from such establishments. Depot level industrial establishments may be government-owned and government-operated, government-owned and contractor-operated, or contractor-owned and contractor-operated.

7.4.2 Assignment of Depot Level Responsibilities. Depot maintenance activities perform higher level maintenance actions on aircraft armament equipment in support of the intermediate level and organizational level. Depot level maintenance for aircraft armament equipment includes all those inspection, repair, and technical directive incorporation functions which are beyond the capability of intermediate level maintenance. Depot level maintenance personnel perform rework and renovation actions on aircraft armament equipment items to allow the items to complete or extend their service life. The activities assigned to perform depot level maintenance on aircraft armament equipment are listed in volume II, section 7, figures 7-4-1 and 7-4-2.

7.4.3 Depot Level Maintenance Actions. Maintenance actions assigned to the depot are:

- a. Complete rework and overhaul of aircraft armament equipment items which are approaching or have reached the expiration of their designated service life, if such rework can economically extend the useful life of the items.

- b. Major corrosion control work, including complete item disassembly, stripping of paint, corrosion treatment,

reassembly, repainting, and restenciling of instructional data.

- c. Hydrostatic testing of guided missile launcher nitrogen receivers.

- d. Testing guided missile launcher internal gas system integrity.

- e. Performing major retrofits in compliance with technical directives.

- f. Provide support services functions, including professional engineering, technology, calibration services, and field teams to support organizational and intermediate level maintenance when required and directed.

7.4.4 Aircraft Armament Equipment Records. Each aircraft armament equipment item is accompanied by a Scheduled Removal Component (SRC) card or Equipment History Record (EHR) card. The SRC or EHR for each aircraft armament equipment item inducted into a depot level activity will be screened for completeness and accuracy upon receipt of the aircraft armament equipment item. All maintenance actions performed on the aircraft armament equipment item, while in the custody of the depot level maintenance activity, will be entered into the applicable record (SRC or EHR) for that aircraft armament equipment item. The SRC or EHR card is transferred with the aircraft armament equipment item when it is issued.

7.4.5 Technical Directives. Depot level maintenance personnel are not only responsible for assuring that technical directives, aircraft armament bulletins and aircraft armament changes are complied with, but they also assist in the development and verification of technical directives that ultimately affect them. This assistance includes engineering change proposal review, development of the resulting technical directive, and verification prior to implementation of the technical directive.

Bomb Rack	NAVAVNDEPOT Jacksonville	NAVAVNDEPOT North Island	NAVAVNDEPOT Cherry Point
MER/TER	X	X	
Aero 7A/7B	X	X	
MK 8 Shackle	NOTE 1		
BRU-11A/A	X		
Aero 65/A	X		
BRU-14/A	X		
BRU-15/A	X		
Aero 20/B	X		
BRU-20/A thru BRU-23/A	X	X	
BRU-32/A	X	X	
BRU-33/A	X	X	
BRU-36/A			X
BRU-12/A	X		
A/A37B-3	X	X	
Notes			
1. Depot level maintenance is not performed on the MK 8 shackle.			

Figure 7-4-1. Assignment of Depot Level Maintenance Responsibilities for Bomb Racks

Guided Missile Launcher	NAVAVNDEPOT Jacksonville, FL	NAVAVNDEPOT North Island, CA	Weapons Station Yorktown, VA
LAU-92	X		
LAU-92 (MOD)	X		
LAU-93	X		
LAU-132	X		
LAU-7		X	
MLA			X

Notes:

1. There are no preventive or corrective maintenance requirements for the LAU-127A/A launcher, as an end item, at the depot level. Depot level maintenance activity for the power supply will be Warner Robbins AFB. Depot level maintenance activity for the nitrogen receiver assemblies will be NAVAVNDEPOT North Island, CA

Figure 7-4-2. Assignment of Depot Level Maintenance Responsibilities for Guided Missile Launchers

Guided Missile Launcher	Boeing Aerospace Contractor	Hill AFB, Ogden, UT	Anniston Army Depot, AL	Letterkenny Army Depot, PA	Norsk Forsvarsteknologi, A/S Kongsberg, Norway
LAU-115/A	X				
LAU-115A/A	X				
LAU-116/A	X				
LAU-116A/A	X				
LAU-117/A (V)2/A		X			X
LAU-127A/A		X1			X1
M272				X	
M299				X2	
TML			X		
MLA					X

Notes:

1. There are no preventive or corrective maintenance requirements for the LAU-127A/A launcher, as an end item, at the depot level. Depot level maintenance activity for the power supply will be Warner Robbins AFB. Depot level maintenance activity for the nitrogen receiver assemblies will be NAVAVNDEPOT North Island, CA
2. Depot Repair for the M299 has yet to be assigned.

Figure 7-4-2 Assignment of Depot Level Maintenance Responsibilities for Guided Missile Launchers (Cont'd)

7.4.6 Maintenance Data Reporting. The maintenance data system is a management information system designed to provide statistical data for use at all management levels. The maintenance data system for depot level maintenance was developed as an integral part of the Naval Aviation Maintenance and Material Management (AV-3M) system and provides the input to furnish data products which provide management tools for the efficient and economical management of maintenance organizations. When performing a job, depot level maintenance personnel convert a narrative description of the job into codes and enter the coded information on standard forms or source documents. The source documents are collected and transmitted to a data services facility where the information is converted to machine records. The data services facility then uses the machine records to produce periodic reports which summarize the submitted data. The reports are supplied to maintenance supervisors to provide assistance in planning and directing the maintenance effort. The information provided by the machine records is forwarded to the Navy Maintenance Support Office, Mechanicsburg, PA, which has been designated as the central data processing facility.

7.4.7 Explosives Handling Personnel Qualification and Certification (Qual/Cert) Program. Depot level maintenance personnel involved with the maintenance of aircraft armament equipment, whose duties involve handling explosive ordnance, must be trained, qualified, and certified to perform these actions in accordance with the requirements of OPNAVINST 8020.14/MCO P8020.11 (NOTAL) or MCO 8023.3 (NOTAL) and appropriate type commander instructions.

7.4.8 Maintenance Training Requirements. Maintenance training is a continuous and ongoing process, conducted to ensure that personnel who operate, maintain, and support weapons systems and associated equipments are qualified to perform their respective functions. Formal and on-the-job maintenance training, for aircraft armament equipment processed at industrial level maintenance activities, may be augmented through the use of Engineering Technical Specialists/Fleet Weapons Support Team provided by the Naval Air Warfare Center, Weapons Division, Point Mugu, CA. Volume I, chapter 4.4 provides procedures for requesting field service training and technical assistance. Volume I, section 6 provides additional information on all aspects of Naval Airborne Weapons Maintenance Training.

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CHAPTER 7.5

AIRCRAFT ARMAMENT EQUIPMENT (AAE) PLANNING FACTORS

7.5.1 Introduction. Procurement objectives and inventory reporting requirements

7.5.2 Purpose.

g. To specify the planned quantities of end item aircraft bomb racks and guided missile launchers (AAE) required for U.S. Navy and Marine aircraft.

h. To specify fleet AAE inventory reporting requirements.

i. To outline general policies for procurement and re-procurement of AAE.

7.5.3 Scope. Responsibilities assigned herein apply to the in-service inventory management of type commander controlled AAE.

7.5.4 Background.

a. The mission essential nature of AAE material dictates that ship and shorebased inventories be maintained at specific levels based on the numbers of aircraft supported, their missions, roles and weapon capabilities. Out year requirements and attrition losses must be accurately predicted in order for realistic procurement planning and budgeting to take place.

b. AAE for new production aircraft is normally procured with the aircraft by the responsible aircraft program manager, in quantities dependant on the number of aircraft being delivered in a given fiscal year. Contractor furnished AAE is usually unique to a particular type aircraft, and is normally delivered installed on the new aircraft.

c. Government furnished AAE required for production aircraft is procured separately and delivered to the aircraft manufacturer for further transfer to fleet activities with the new aircraft.

d. New or reconfigured AAE may be required when existing aircraft acquire new weapon capabilities. In that event the program manager responsible for the upgrade is responsible for budgeting for procurement of the new AAE, or the upgrade to existing AAE.

e. Re-procurement becomes necessary when inventory losses occur thru attrition or age, or when material is damaged beyond economical depot level repair.

7.5.5 Responsibilities.

a. NAVSURFWARCEIN Crane, IN stores War Reserve AAE, and certain AAE having Foreign Military applications. Reporting requirements for this material is separately governed.

b. Type Commanders will collect, consolidate and submit quarterly AAE Inventory Reports to COMNAVAIR-SYSCOM, PMA-201C. Reports will be transmitted by Naval Message, due 15 October, 15 January, 15 April, and 15 July. See Chapter 7.6 Inventory Reporting.

c. NAVAIR PMA-201/AIR 3.1.1K will consolidate the Tycom reports and utilize the worldwide inventory data as the basis for preparing the AAE Asset Status Matrix. The matrix will project the current inventory 10 years into the future. The projected inventory will be weighed against then year aircraft populations to identify out year shortages or excesses. The most current model detail of the Aircraft Program Data File is the sole source document to be used for planning out year Program Active Aircraft Inventories. Data contained in the U.S. Navy Aircraft Budget Exhibit A-II will be used to determine numbers of aircraft in roles other than tactical, training or research and development for which certain AAE may be required. The Asset Status Matrix will be produced at least annually, or more often should circumstances warrant, and distributed to concerned officials.

d. When the AAE Asset Status Matrix identifies an out-year shortage, PMA-201C will advise the cognizant type aircraft Program Manager of the impending shortfall, in order for a timely procurement decision to be made.

e. When the AAE Asset Status Matrix identifies GFE material in excess to operational requirements, as may occur when an aircraft model is being phased out of service, PMA-201 will advise production aircraft Program Managers that the excess may be made available in lieu of new procurement.

7.5.6 Actions.

a. Type commanders shall continuously review the planning factors to ensure that the quantities of AAE listed are adequate to meet current operational needs. Recommended changes shall be submitted to Chief of Naval Operations (CNO) N781C8, with copies to Commander Naval Air Systems Command (COMNAVAIRSYSCOM) (PMA-201 and AIR-3.1.1K).

b. COMNAVAIRSYSCOM shall ensure planning factors and inventory report remain current by submitting recommended changes to CNO N781 when technical directive incorporation affects part numbers, when emergent weapon capabilities add or change AAE requirements, or when an item is deleted for obsolescence.

7.5.7 Definitions.

a. AIRCRAFT ARMAMENT EQUIPMENT (AAE): Generic term for end item Aircraft Missile Launchers and Bomb Racks.

b. AIRCRAFT MODEL: The complete designation of an aircraft, independent of its role, i.e., F-18E, AV-8B.

c. AIRCRAFT ROLE: The current use of an operational aircraft, i.e., Tactical, Trainer, Patrol.

d. INVENTORY AAE: Those items of AAE that normally remain installed on an aircraft, i.e., BRU-32, BRU-36, LAU-116.

e. MISSION AAE: Those items of AAE that are installed on an aircraft for a specific mission purpose and normally removed on completion of that mission, i.e., LAU-118, BRU-33, BRU-42.

f. SUPPLY COGNIZANCE SYMBOL 4Z: 4Z COG material is comprised of war consumable external fuel tanks, in-flight refueling stores, aircraft guided missile launchers and aircraft bomb racks. AAE is budgeted for and procured by the Naval Air Systems Command, and maintained by type commander controlled pools for use by assigned tactical squadrons.

7.5.8 AAE Inventory Reporting Requirements.

7.5.8.1 Background. An AAE Inventory Reporting System has been in effect within the Aviation Ordnance community for 30 plus years. Type commander reports form the basis for projecting readiness posture, justifying new procurements, monitoring technical directive incorporation status, change kit procurement quantities and numerous other details requiring specific inventory data.

7.5.8.2 Format. The following pages list item numbers for each uniquely part numbered item of AAE. The listing contains only those items for which CNO/NAVAIR requires inventory data. Certain Non-4Z COG items such as F/A-18 Pylons and F-14 Weapon Rails are included, as these directly affect readiness. Reporting TYCOM's may require additional item reporting from subordinate units and may add line items for their individual feeder reports as required. Report cutoff date is the last day of each calendar quarter and due at NAVAIR fifteen days later. Reports will be in column format, A thru E as follows:

a. A-Line Item Number

b. B-Total quantity of installed and uninstalled items, all condition codes.

c. C-Total quantity in Condition Code (A).

d. D-Total quantity of combat, non-combat losses.

e. E-Notes. Use numerics and amplify column B gains over the reporting period, and column D losses such as transfers to other custodians, BCMs, combat loss, etc.

7.5.8.3 Obsolete material without a line item number assigned, will be reported by nomenclature and part number. A sample of the NAVAIR Consolidated Report is contained in figure 7-5-1.

7.5.9 AAE PLanning Factors.

7.5.9.1 General. The following pages list quantities of end item bomb racks and missile launchers authorized per airframe. Aircraft Controlling Custodians may use this data to compute total requirements based on the number and types of aircraft supported and their mission roles.

7.5.9.2 COMNAVAIRSYSCOM shall use these quantities to compute worldwide inventory objectives.

7.5.9.3 Quantities of 4Z Cognizance material listed herein may be used to derive requirements for other interrelated non-4Z COG material needed to install the bomb rack or launcher such as pylons, fairings, adapters, electrical interface harnesses, etc. Figures 7-5-2 through 7-5-13 provides a listing of Aircraft Applications for the various AAE items.

7.5.10 AAE Asset Status Matrix.

7.5.10.1 The AAE Asset Status Matrix presents inventory status projected 10 years into the future, as a tool to determine readiness posture and identify shortfalls in sufficient lead time to allow the procurement process to take place.

ITEM		NOMENCLATURE	PART NO.	NSN	CNAP	CNAL	CNAVRES	CNATRA	CRANE	NAVAIR	TOTAL
1	A	TER-7 A/A37B-5E	292AS500-201	4ZH1095-01-055-8923FZ	0	17	0	0	68	9	94
	B		292AS100-201	4ZH1095-01-055-8923FZ	0	0	0	0	0	0	0
TOTALS:					0	17	0	0	68	9	94
PREVIOUS QUARTER: 200											
MAINTENANCE PIPELINE: .057											
ITEM		NOMENCLATURE	PART NO.	NSN	CNAP	CNAL	CNAVRES	CNATRA	CRANE	NAVAIR	TOTAL
2	A	MER-7 A/A37B-6E	291AS500-201	4ZE1095-01-053-7225FZ	1	63	18	0	187	10	279
	B	MER-7	291AS100-201	4ZE1095-01-053-7225FZ	0	13	0	0	0	0	13
TOTALS:					1	76	18	0	187	10	292
PREVIOUS QUARTER: 269											
MAINTENANCE PIPELINE: 0.04											
ITEM		NOMENCLATURE	PART NO.	NSN	CNAP	CNAL	CNAVRES	CNATRA	CRANE	NAVAIR	TOTAL
3	A	ITER (BRU-42/A)	1348AS500	4ZH1095-01-257-1967FA	721	954	35	0	625	46	2381
TOTALS:					721	954	35	0	625	46	2381
PREVIOUS QUARTER: 2417											
MAINTENANCE PIPELINE: 0.04											
ITEM		NOMENCLATURE	PART NO.	NSN	CNAP	CNAL	CNAVRES	CNATRA	CRANE	NAVAIR	TOTAL
4	A	IMER (BRU-41/A)	1348AS100	4ZH1095-01-257-1968FA	563	402	100	0	175	25	1265
TOTALS:					563	402	100	0	175	25	1265
PREVIOUS QUARTER: 1264											
MAINTENANCE PIPELINE: 0.04											

Figure 7-5-1. Sample Navair Consolidated Inventory Report

ITEM		NOMENCLATURE	PART NO.	NSN	CNAP	CNAL	CNAVRES	CNATRA	CRANE	NAVAIR	TOTAL
5	A	BRU-33/A	J014000-525	4ZE1095-01-209-0665GF	171	119	68	0	0	11	369
	B	BRU-33/A	J014000-529	4ZE1095-01-314-8688GF	4	63	56	0	0	0	123
	C	BRU-33A/A	J014000-541	(IAAC-911)	408	405	76	0	0	27	916
	D	BRU-33A/A	3036AS100		114	163	0	0	0	0	277
TOTALS:					697	750	200	0	0	38	1685
PREVIOUS QUARTER: 1509											
MAINTENANCE PIPELINE: 0.06											
ITEM		NOMENCLATURE	PART NO.	NSN	CNAP	CNAL	CNAVRES	CNATRA	CRANE	NAVAIR	TOTAL
6	A	A-4 MER-7 ADAPTER KIT	5821500-523	4ZD1095-00-909-2799DA	0	12	0	0	15	0	27
	B		5821500-543	4ZD1095-00-408-5658DA	0	0	0	0	0	0	0
TOTALS:					0	12	0	0	15	0	27
PREVIOUS QUARTER: 12											
MAINTENANCE PIPELINE: 0.000											
ITEM		NOMENCLATURE	PART NO.	NSN	CNAP	CNAL	CNAVRES	CNATRA	CRANE	NAVAIR	TOTAL
7	A	A-4 TER-7 ADAPTER SET	5821520-523	4ZD1095-00-909-2756DA	0	12	0	0	0	0	12
TOTALS:					0	12	0	0	0	0	12
PREVIOUS QUARTER: 12											
MAINTENANCE PIPELINE: 0.000											
ITEM		NOMENCLATURE	PART NO.	NSN	CNAP	CNAL	CNAVRES	CNATRA	CRANE	NAVAIR	TOTAL
8	A	A-6 MER-7 ADAPTER KIT	291AS394-1	4ZM1095-01-024-6515FA	0	125	0	0	109	0	234
TOTALS:					0	125	0	0	109	0	234
PREVIOUS QUARTER: 125											
MAINTENANCE PIPELINE: 0.000											

Figure 7-5-1 Sample Navair Consolidated Inventory Report (Cont'd)

Aircraft Mission Armament Equipment	EA-6B
LAU-7A7	.5 (a)
ADU-299B/A	.5 (a)
LAU-118	2 (a)
NOTES: (a) Required for tacts pod use only. Aircraft Inventory Armament Equipment: AERO-7A Four for each model. AERO-7B One for each model.	

Figure 7-5-3. AAE Planning Factors for EA-6B Aircraft

Aircraft Mission Armament Equipment	AV-8B	TAV-8B AND AV-8B TRNR
BRU-42	4	2
LAU-7C/A (a)	2.5	2
ADU-299	0.5	0
LAU-117	2	0
Practice Bomb Kit	9	6
NOTE: (a) LAU-7A6 or LAU-7/A7 suitable substitute pending upgrade to C/A configuration. Aircraft Inventory Armament Equipment: BRU-36 Seven for each model.		

Figure 7-5-4. AAE Planning Factors for AV-8B Aircraft

	F-14A			F-14B / F-14D		
Aircraft Mission Armament Equipment	Tactical	Trainer	Reconnais- sance	Tactical	Trainer	Reconnais- sance
LAU-138/A	4	2	2	4	2	2
LAU-92C/A (Pylon STA)	2	0	0	2	0	0
LAU-93B/A	4	4	4	0	0	0
LAU-132	0	0	0	4	4	4
BRU-32A/A	4	2	2	4	2	2
BRU-42/A	2	2	2	2	2	2
Practice Bomb Kit	6	6	6	6	6	6
MXU-611 LH	1	1	1	0	0	0
MXU-611 RH	1	1	1	0	0	0
MXU-776 LH	0	0	0	1	1	1
MXU-777 RH	0	0	0	1	1	1
<p>Aircraft Inventory Armament Equipment :</p> <p>LAU-92B/A or C/A. Four for each aircraft. (Fuselage Stations)</p>						

Figure 7-5-5. AAE Planning Factors for F-14 Aircraft

AIRCRAFT INVENTORY ARMAMENT EQUIPMENT:	F/A-18 A, B, C, & D	F/A-18 E & F
BRU-32A/A	5	0
BRU-32B/A	0	7
LAU-7B/A-1	2 (a)	0
LAU-116A/A LEFT	1	0
LAU-116A/A RIGHT	1	0
LAU-116B/A LEFT	0	1
LAU-116B/A RIGHT	0	1
LAU-127A/A	0	2
ADU-773/A	0	2

Figure 7-5-6. AAE Planning Factors for F/A-18 Aircraft

AIRCRAFT MISSION ARMAMENT EQUIPMENT:	F/A-18 A, B, C, & D <u>TACTICAL</u>	F/A-18 A, B, C, & D <u>TRAINER</u>	F/A-18 E & F <u>TACTICAL</u>	F/A-18 E & F <u>TRAINER</u>
BRU-33A/A, BRU-33/A	4 (b)	2 (b)	4 (b)	2 (b)
BRU-41/A	1	1	1	1
BRU-42/A	0.33	0	0.33	0
LAU-7B/A-1	1 (a)	1 (a)	2	2
LAU-115C/A	1	0	0	0
LAU-115D/A	0	0	2	0
LAU-117A	1	0	1	0
LAU 118/A	1	0.02	1	0.02
LAU-127A/A	1 (c)	0	2	0
PRAC BOMB KIT	6	6	6	6
NOTES: (a) LOT XII and above C and D A/C. Lower lots use LAU-7/A-7 (b) Optimum mix of VER/CVER mission dependant. (c) LOT X and above C and D A/C. Lower lots none				

Figure 7-5-5. AAE Planning Factors for F/A-18 Aircraft (Cont'd)

Aircraft Mission Armament Equipment :	T-45
Practice Multiple Bomb Rack (PMBR)	1
Aircraft Inventory Armament Equipment : ERU-119 Two for each aircraft.	

Figure 7-5-7. AAE Planning Factors for T-45 Aircraft

Aircraft Mission Armament Equipment :	P-3B	P-3C
BRU-14	3	3
AERO-1A	6	6
AERO-1B	6	6
LAU-117	0	2 (a)
NOTE: (a) Applies to the (planned) 60 MAVERICK capable aircraft only. Aircraft Inventory Armament Equipment : BRU-12. Eight for each model. BRU-15. Six for each model.		

Figure 7-5-8. AAE Planning Factors for P-3 Aircraft

Aircraft Mission Armament Equipment :	S-3B
BRU-42/A	1
Practice Bomb Kit	3
LAU-117	1 (a)
ADU-299A/A	.5 (b)
LAU-7A7	.5 (b)
NOTE: (a) Applies to MAVERICK capable aircraft only (b) Tacts pod use only Aircraft Inventory Armament Equipment : BRU-11 Two for each model. BRU-14 Four for each S-3A AND S-3B aircraft	

Figure 7-5-9. AAE Planning Factors for S-3B Aircraft

Aircraft Mission Armament Equipment :	SH-2G
None	
NOTE: SH-2G out of service FY 01 Aircraft Inventory Armament Equipment : MK-8 Bomb Shackle Two for each model	

Figure 7-5-10. AAE Planning Factors for SH-2G Aircraft

Aircraft Mission Armament Equipment :	SH-3H, UH-3H
None	
NOTE: SH-3H out of service FY-00 Aircraft Inventory Armament Equipment : MK-8 Bomb Shackle Three for each SH-3H, Two for each UH-3H model.	

Figure 7-5-11. AAE Planning Factors for SH-3H, UH-3H Aircraft

Aircraft Mission Armament Equipment :	AH-1W	AH-1Z	UH-1N	UH-1Y
M-272	2	0	0	0
M-299	0	4	0	0
LAU-7C/A (a)	2	2	0	0
TML	2	0	0	0
ADU-299A/A	2	2	0	0
BRU-20/A	0	0	1	0
BRU-21/A	0	0	1	0
BRU-22/A	0	0	0	1
BRU-23/A	0	0	0	1
NOTE: (a) LAU-7/A6 OR LAU-7/A7 suitable substitute pending completion of upgrade to LAU-7C/A Aircraft Inventory Armament Equipment : TOW Ejector Rack Two for each AH-1W. BRU-22/A One for each AH-1Z, One for each AH-1W. BRU-23 Two for each AH-1Z, One for each AH-1W.				

Figure 7-5-12. AAE Planning Factors for AH-1 / UH-1 Aircraft

Aircraft Mission Armament Equipment:	SH-60B	SH-60R	HH-60H
M-299	1	1	1
Aircraft Inventory Armament Equipment: BRU-14 Three for each model.			

Figure 7-5-13. AAE Planning Factors for SH-60B, SH-60F, SH-60R and HH-60H Aircraft

Aircraft Mission Armament Equipment:	CNATRA
PMBR	0.5
NOTE: TA-4J out of service FY-00 Aircraft Inventory Armament Equipment: AERO-7A. One for each model. AERO-20B. Two for each model.	

Figure 7-5-14. AAE Planning Factors for TA-4J Aircraft

7.5.10.2 A matrix will be prepared for each end item of AAE and certain critical sub-assemblies such as LAU-7 Power Supplies, Nitrogen Receivers, or any other related components when the need arises.

7.5.10.3 The Matrix is an 11 column spreadsheet, columns headed and defined as follows: (See figure 7-5-14 for sample AAE Asset Status Matrix)

- a. COLUMN 1, Date-The last day of each fiscal year.
- b. COLUMN 2, Procurements-The contracted quantity. First line includes all prior year quantities yet to be delivered. For CFE material delivered with new aircraft, use the amount to be delivered with each production lot.
- c. COLUMN 3, Scheduled Delivery-The quantity to be delivered during each fiscal year.
- d. COLUMN 4, Attrition-Planned losses caused by jettison or other irreparable damage.
- e. COLUMN 5, Projected Inventory-Line 1 is the actual on hand inventory. Subsequent lines add gains from column 3 minus losses column 4.

- f. COLUMN 6 & 7, Requirements for Primary Mission and Backup Aircraft-The quantity of an item listed in planning factors multiplied by the number of user aircraft as contained in the APDF & Exhibit A II.

- g. COLUMN 8, Requirement for Reconstitution Reserve Aircraft-The quantity of an item listed in planning factors multiplied by the number of aircraft held in Reconstitution Reserve category.

- h. COLUMN 9, Requirement for a Maintenance Pipeline-The percentage of the column 3 inventory expected to be out of service for scheduled or unscheduled maintenance at any given time.

- i. COLUMN 10, Total Inventory Objective-The sum of the preceeding four requirements columns.

- j. COLUMN 11, Net Asset Status-The difference between the projected inventory quantity and the total inventory objective. Negative numbers indicate the procurement quantity required to meet the inventory objective, positive numbers indicate excesses.

7.5.11 ATTRITION AND MAINTENANCE PIPELINE PERCENTAGES (See figure 7-5-15)

AAE Net Asset Status Matrix LAU-7C/A Missile Launcher

FY Ending Date	Procurements	Scheduled Delivery	Attrition	Projected Inventory	Requirement for Primary Mission & Backup A/C PMAI/BAI		Requirement for Reconst Reserve Aircraft	Requirements for Maint. Pipeline Spares	Total Inventory Objective	Net Asset Status
30-SEP-98	30			242	689	80	4	62	835	-593
30-SEP-99	35	30	5	267	619	67	0	55	741	-474
30-SEP-00	40	35	6	296	625	55	0	54	734	-439
30-SEP-01	54	40	7	329	625	51	0	54	730	-401
30-SEP-02	60	54	8	375	625	47	0	54	726	-351
30-SEP-03	100	60	9	426	625	35	0	53	713	-286
30-SEP-04	100	100	11	516	623	26	0	52	701	-185
30-SEP-05		100	12	604	623	22	0	52	697	-93
30-SEP-06			12	592	623	22	0	52	697	-105
30-SEP-07			12	580	579	22	0	48	649	-69

Figure 7-5-14. Format for AAE Net Asset Status Matrix LAU-7C/A Missile Launcher

Attrition and Maintenance Pipeline Percentages

<u>Missile Launchers</u>	<u>Attrition</u>	<u>Maintenance Pipeline</u>
LAU-7	.01	.08
Power Supply LAU-7	.035	.10
N2 Receiver LAU-7	.05	.15
LAU-92	.02	.105
LAU-93	.011	.084
LAU-132	.011	.084
LAU-115C/A	.02	.02
LAU-116A/A	.01	.04
LAU-117	.005	.04
LAU-118	.03	.04
LAU-127	.04	.05
LAU-138	.02	.105
M272	.02	.04
M299	.02	.04
TOW Missile Launcher	.01	.01
ADU-299 Adapter	.01	N/A
LAU-138 Nitrogen Receiver	.05	.30
LAU-127 Nitrogen Receiver	.05	.30
<u>Bomb Racks</u>	<u>Attrition</u>	<u>Maintenance Pipeline</u>
AERO-7A	.014	.063
AERO-7B	.047	.063
AERO-20	.01	.054
BRU-11	.01	.165
BRU-12	.005	.051
BRU-14	.004	.06
BRU-15	.008	.052
BRU-20-21-22-23	.02	.073
BRU-32	.01	.04
BRU-33	.025	.06
BRU-36	.01	.04
IMER/BRU-41A	.03	.04
ITER/BRU-42A	.06	.057
MK Shackle	.01	.01
PMBR	.06	.04
TOW Ejector Rack	.02	.04
AERO-1A Adapter	.01	.01
AERO-1B Adapter	.01	.01
Practice Bomb Kit	.045	N/A

Figure 7-5-15 Attrition and Maintenance Pipeline Percentages

CHAPTER 7.6

Inventory Reporting

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CHAPTER 7.6

Inventory Reporting

7.6.1 General. Fleet-generated armament equipment inventories form the basis for justifying new procurements, projecting readiness status, forecasting technical directive kit requirements, validating projected attrition rates, and feeding other related procurement decisions. The importance of an accurate and timely asset posture cannot be overstressed.

7.6.2 Responsibilities. Squadrons and squadron-based detachments home based, deployed ashore or afloat report on hand quantities of Ready For Issue (RFI) AAE to their supporting intermediate level armament equipment pool sub-custodian. Reserve Squadrons and Marine Aircraft Groups at sites controlled by type commanders other than COMNAVAIRESFOR will retain inventory reporting requirements for Naval Reserve AAE assets. Physical custody of naval reserve AAE assets by the station armament equipment pool is permitted; however, reporting custody requirements will remain with the Reserve squadrons and Marine Aircraft Groups. Replacement AAE will be requisitioned using local procedures. AAE pool sub-custodians consolidate reports, add RFI and Non-RFI equipment physically held at the intermediate level, and report totals through the chain of command to the cognizant type commander. Type commanders review feeder reports for accuracy, consolidate and submit final reports to COMNAVAIRSYSCOM. NAV-AIR totals and tabulates feeder reports by aircraft custodian; compares balances to planning factor requirements, and present/future aircraft populations. The cognizant NAVAIR program manager or program executive officer will be advised of predicted shortages so that timely budgeting and procurement actions may take place.

7.6.2.1 Reports will list as a minimum the items in figure 7-6-1, List of Aircraft Armament Equipment. Type com-

manders may require data on additional items and may task subordinate units to report accordingly.

7.6.2.2 Reports will be formatted and submitted via unclassified naval message to COMNAVAIRSYSCOM, PATUXENT RIVER MD, AIR-3.1.1, not later than 15 October, 15 January, 15 April, 15 July.

7.6.2.3 Quarterly reports are required from COMNAV-AIRLANT, COMNAVAIRPAC, COMNAVAIRESFOR, and CNATRA. COMNAVAIRSYSCOM (AIR-5.0D) Aircraft Controlling Custodian (ACC) will report quantities of AAE held in support of OPTEVFOR and NAVAIR RDT&E aircraft.

7.6.2.4 Reports will be formatted, listing the item number followed by columns A through F, defined as:

- a. Total quantity of installed and not installed items as of the last day of the reporting quarter.
- b. Quantity of assets sub-custodian to user activities.
- c. Quantity of Ready For Issue (RFI) assets physically located within the prime equipment pool.
- d. Quantity of Non-RFI assets that are repairable by the prime pool custodian.
- e. Total Quantity of combat/non-combat losses incurred during reporting period.
- f. Quantity of equipment installed on aircraft which will reach high time removal for overhaul/inspection within the next reporting period.

Item	Number	Nomenclature	Part No.	NSN
1	A	TER EJECTION RACK TER-7	292AS500-201	4ZH1095-01-055-8923FZ
2	A	MER EJECTION RACK MER-7	291AS500-201	4ZE1095-01-053-7225FZ
	B	A/A-37B-6E	291AS100-201	4ZE1095-01-053-7225FZ
3		IMPROVED TRIPLE EJECTOR RACK (ITER) BRU-42	1348AS500	4ZH1095-01-257-1967FA
4		IMPROVED MULTIPLE EJECTOR RACK (IMER) (IMER) BRU-41	1348AS100	4ZH1095-01-257-1968FA
5	A	BRU-33/A	J014000-525	4ZE1095-01-209-0665GF
	B		J014000-529	4ZE1095-01-314-8688GF
	C	BRU-33A/A	J014000-541	
	D	BRU-33A/A	3036AS100	
6	A	BRU-42 (ITER) ADAPTER KIT	75A732685-1001	IR LL CRB 0852ER
7	A	PRAC. MULT. BOMB RACK (PMBR)	64A81H3-1	4ZE1095-00-754-7869FZ
	B		64A81H3-2	4ZE1095-00-133-8248FZ
	C		64A81H3-3	4ZE1095-00-133-8249FZ
	D		64A81H3-4	4ZE1095-00-077-2381KA
8	A	AERO-7A3 BOMB EJECTOR RACK	302AS100	4ZH1095-00-176-1454FZ
	B	AERO-7A5	300AS200	4ZH1095-00-215-9362FZ
9	A	AERO-7B4 BOMB EJECTOR RACK	417AS200	4ZE1095-01-224-7399FA
	B		303AS200	4ZE1095-00-176-1449FA
10	A	AERO-20B-1 BOMB EJECTOR RACK	304AS300	4ZH1095-01-081-6476DA
	B		304AS400	4ZH1095-01-230-1500DA
11	A	AERO-65A1 BOMB RACK	55A44R66	AZH1095-00-294-147FZ
	B		55A44R101	4ZH1095-00-946-2456FZ
	C		55A44R101-1	4ZH1095-00-717-1121FZ
	D	AERO-65A1 B1 BOMB RACK	252AS100	4ZH1095-00-178-9250FZ
	E	AERO-65A1 BOMB RACK (MOD)	929472-101	4ZH1095-00-967-3715FZ
12	A	AERO-1A ADAPTER FRONT	55A40D2-1	4ZE1095-00-216-2208FZ
	B		443AS201	4ZE1095-01-299-2239FZ
13	A	AERO-1A ADAPTER REAR	55A40D4-1	4ZE1095-00-216-2209FZ
	B		443AS202	4ZE1095-01-297-7813FZ
14	A	BRU-11/B BOMB EJECTOR RACK	427AS300	4ZE1095-01-220-5001CS
	B	BRU-11A/B BOMB EJECTOR RACK	428AS850	4ZH1095-01-220-5002CS
	C		428AS900	4ZH1095-01-220-5003CS
	D		428AS950	4ZH1095-01-220-5004CS
15	A	BRU-12/A BOMB EJECTOR RACK	531AS100-1	4ZE1095-00-119-4168BP
	B	BRU-12 W/956	531AS200-1	1095-01-441-0826
16	A	BRU-14/A BOMB EJECTOR RACK	549AS300-1	4ZE1095-01-069-8545BP
	B		549AS400-1	4ZE1095-01-320-5988BP

Figure 7-6-1. List of Reportable Aircraft Armament Equipment

Item Number	Nomenclature	Part No.	NSN
17 A	BRU-15/A BOMB EJECTOR RACK	557AS200-1	4ZH1095-01-072-7119BP
B		557AS300-1	4ZH1095-01-069-8595BP
C		557AS400-1	4ZH1095-01-336-8303BP
D	BRU-15/A W/955	557AS500-1	4ZE1095-01-441-0827BP
18 A	BRU-20/A BOMB EJECTOR RACK	291AS400	4ZE1095-01-072-7119AH
B		5827810-505	4ZE1095-00-121-7400AH
19 A	BRU-21/A BOMB EJECTOR RACK	291AS405	4ZE1095-00-121-746AH
B		5827810-507	4ZE1095-00-121-7406AH
20 A	BRU-22/A BOMB EJECTOR RACK	5827810-509	4ZH1095 00-121-7408AH
B		291AS410	4ZH1095-00-121-7408AH
C		291AS470	4ZE1095-00-220-4992AH
21 A	BRU-23/A BOMB EJECTOR RACK	5827810-511	4ZE1095-00-121-7410AH
B		291AS415	4ZE1095-00-121-7410AH
22 A	BRU-32A/A BOMB EJECTOR RACK	J013400-527	4ZE1095-01-324-8752GF
B		J013400-531	4ZE1095-00-300-1671GF
C		1534AS100	
D		1534AS5000	
E		1534AS7000	
23 A	BRU-36A/A BOMB EJECTOR RACK	MD31623-3000	4ZE1095-01-216-8441SR
B		MD31623-3500	4ZE1095-99-785-9858SR
24 A	TOW STORE EJECTOR RACK	15-004-001-5	4ZH1430-01-058-8687AH
B		209-071-243-7	4ZH1430-01-058-8687AH
25 A	TOW MISSILE LAUNCHER	3234008-110	4ZH1440-00-626-8285AH
26 A	HELLFIRE LAUNCHER (M-272)	13009444	4ZH1440-00-122-8965AH
27 A	HELLFIRE LAUNCHER (M-299)	13425104	4ZH1440-00-122-8965AH
28 A	LAU-7/A-658A164H874	4ZH1440-01-258-2518FZ	
B		139040-1 ECP-87	
C	LAU-7B/A (AAC-900)	3188AS100	
D	LAU-7B/A-1	3188AS200	4ZE1440-01-458-4568FZ
E	LAU-7/A-7	58A164H900	4ZE1440-01-458-4398FZ
F	LAU-7C/A (HiPPAG)	3455AS100	1440-01-458-4694
G	LAU-7D/A	(TBD)	(TBD)
29 A	LAU-7 POWER SUPPLY PP2581A	60A89D114	7RE1440-00-051-3187FZ
B	PP2581A/A	60A89D500	7RE1440-01-141-2735FZ
C	PP7992/A	534D1000	7RH1440-01-157-5492FZ

Figure 7-6-1. List of Reportable Aircraft Armament Equipment (Cont'd)

Item Number	Nomenclature	Part No.	NSN
30 A B	LAU-7 NITROGEN RECEIVER	58A164D556 58A164D863	7RE1440-00-963-9444MX 7RE1440-01-140-7620MX
31 A B C	ADU-299 ADAPTER ADU-299A/A ADU-299B/A	67A71H2 564AS100-1	4ZE1440-00-405-5353FZ 4ZE1440-00-399-5670FZ
32 A B C D	LAU-92B/A MISSILE LAUNCHER LAU-92C/A MISSILE LAUNCHER	A51K9006-95 A51K9006 101 A51H9006-97 A51K9006-103	4ZE1440-01-006-1829PF 4ZE1440-01-014-1052PF 4ZE1440-01-012-3293PF 4ZE1440-01-012-3294PF
33 A B	LAU-93/A LAU-93B/A MISSILE LAUNCHER	A51K9001-17 A51K9001-21	4ZE1440-00-113-6740PF 4ZE1440-01-131-1436PF
34 A	LAU-132/A MISSILE LAUNCHER	A51K9001-23	4ZE1440-01-320-7014PF
35 A	LAU-138A/A MISSILE LAUNCHER	3494AS100	1440-01-458-4630
36 A	LAU-138A/A NITROGEN RECEIVER	YE1001/02/0	3655-01-434-3863
37 A B C D E F G H I J K L M N O P	SPARROW ADAPTER	A51B25001-21 A51B25001-29 AS1B25001-51 A51B25001 A51B25001-65 A55AM1070-5 18Y1340-1 18Y1340-2 18Y1340-3 18Y1340-4 A55B25004-3 18Y1340-5 18Y1340-6 A55B25001-1 A55B25001-3 A55B25001-5	7RH1095-00-124-1347PF 7RH1095-01-008-3693PF 7RH1095-01-104-9407PF 597RH1095-01-211-8100PF 7RH1440-01-435-3687PF 7RH1440-01-435-8623PF
38 A B C D E F G H I J K L M N	PHOENIX ADAPTER	A55AM1071-5 18Y1340-6 18Y1340-2 18Y1340-6 18Y1350-2 18Y1350-3 A51B25004-39 A51B25004-43 A51B25004-65 A51B2S004-81 A51B25004-61 A55825004-5 A51B25004-99	 7RH1095-01-124-1335PF 7RH1095-01-008-0528PF 7RH1095-01-166-3371PF 7RH1095-01-220-4220PF

Figure 7-6-1. List of Reportable Aircraft Armament Equipment (Cont'd)

Item Number	Nomenclature	Part No.	NSN
39 A B C D	PHOENIX FAIRING LH	A51B60020-3 A51B60020-21 A51B60020-29 A51B60020-39	7RH1440-00-146-5548PF 7RH1440-00-468-0756PF 7RH1440-01-005-5394PF
40 A B C D	PHOENIX FAIRING RH	A51B60021-17 A51B60021-39 A51B60021-43 A51B60021-55	7RH1440-00-148-7258PF 7RH1440-01-116-8618PF
41 A B	PHOENIX FAIRING ADAPTER. LH	A51B60022-5 A51B60022-45	1RD1560-01-039-0831PF 1RD1560-01-039-0831PF
42 A B	PHOENIX FAIRING ADAPTER. RH	A51B60022-7 A51B60022-47	1RD1560-01-039-0832PF 1RD1560-01-039-0832PF
43 A B C D	SIDEWINDER ADAPTER. STA A	A51B25003-1 A51B25014-3 A51B25014-23 A51B25014-31	7RH1095-00-769-0728PF 7RE1440-00-578-4217PF 7RE1440-01-220-4224PF
44 A B C	SIDEWINDER ADAPTER. LH STA B	A51B25015-3 A51B25015-15 A51B25015-19	7RH1560-01-004-9668PF 7RH1560-01-004-9668PF 7RH1440-01-220-4224PF
45 A B C	SIDEWINDER ADAPTER. RH STA B	A51B25015-4 A51B25015-16 A51B25015-20	7RH1560-01-004-9669PF 7RH1560-01-004-9669PF
46 A B C D E F	MXU-611 JETTISON RELEASE MECH LH	A51K56000-1 A51K56000-3 A51K56000-7 A51K56000-15 A51K56000-19 1907AS100-1	7RE1680-00-003-6383PF 7RE1680-00-343-0337PF 7RE1680-00-499-9572PF 7RE1680-01-144-4056PF 7RE1680-01-213-2193PF 7RE1095-01-220-4225PF
47 A B C D E	MXU-611/A JETTISON RELEASE MECH RH MXU-611A/A	A51K56000-2 A51K56000-8 A51K56000-16 A51K56000-20 1907AS100-2	7RE1680-00-003-6384PF 7RE1680-00-483-9046PF 7RE1680-01-144-4057PF 7RE1680-01-213-2194PF 7RH1560-01-353-8346PF
48 A B	MXU-776 JETTISON RELEASE MECH (LH) MXU-776B/A	2032AS100-1 2032AS1000-1	7RE1680-01-398-7153 7RE1680-01-462-4447
49 A B	MXU-777A/A JETTISON RELEASE MECH (RH) MXU-777B/A	2032AS100-2 2032AS1000-2	7RE1680-01-406-5743 7RE1680-01-462-4448
50 A B C D	WEAPONS RAIL	A51K61020-31 1618-AS100-1 A51K61020-39 1906AS100-1	7RE1095-00-630-0762PF 7RH1095-01-233-0062PF 7RH1095-01-220-4225PF

Figure 7-6-1. List of Reportable Aircraft Armament Equipment (Cont'd)

Item Number	Nomenclature	Part No.	NSN
51 A B	UMBILICAL BRIDGE LH	A51K61046-13 A51K61046-21	7RH1095-01-041-0816PF 1RM LL CRB 1887
52 A B	UMBILICAL BRIDGE RH	A51K61046-15 A51K61046-23	7RH1095-01-039-0809PF 1RM LL CRB 1888
53 A B C D E F G H I	LAU-115/A MISSILE LAUNCHER LAU-115A MISSILE LAUNCHER LAU-115A/A MISSILE LAUNCHER LAU-115B/A MISSILE LAUNCHER LAU-115C/A MISSILE LAUNCHER LAU-115C/A MISSILE LAUNCHER LAU-115D/A MISSILE LAUNCHER	74A730351-1007 74G30351-1003 139044-1 139120-1 74A730351-1011 74G730351-1015 74A730351-1013 427HN0100 74A730351-1021	4ZE1440-01-174-6280GF 4ZE1440-01-125-8941GF 4ZH1440-01-272-8003GF 4ZH1440-01-459-3607
54 A B C D	LAU-116A/A MISSILE LAUNCHER LH LAU-116A/A LAU-116/A MISSILE LAUNCHER LAU-116B/A	74A730301-1017 139046-5 74G30301-1005 74A730301-1023	4ZH1440-01-347-5745SF
55 A B C D	LAU-116A/A MISSILE LAUNCHER RH LAU-116B/A	74A730301-1018 139046-6 74G730301-1006 74A730301-1024	4ZE1440-01-349-8614SF
56 A B	MISSILE WELL COVER LH	74A730237-1001 74A730237-1005	1RD1560-01-125-8512GF 1RD1560-01-286-2201SF
57 A B	MISSILE WELL COVER RH	74A730237-1002 74A730237-1006	1RD1560-01-286-2202SF 1RD1560-01-125-8511GF
58 A	LAU-117(A)(V)2/A LAUNCHER	3384400-120	4ZH1440-01-129-3827MX
59 A	LAU-118(V)1A LAUNCHER	704AS4169-1	4ZH1440-01-187-9375MX
60 A B	LAU-127/A MISSILE LAUNCHER LAU-127B/A	3820470-135 497HN0100-1	7RE1440-01-3878014SF Added line item
61 A B	LAU-127/A NITROGEN RECEIVER	654317-1 654317-2	7RH8120-01-378-2083SF
62 A B C D	SUU-62/A PYLON	74A735001-1013 74A735001-1015 74A735001-1017 74G735001-1003	7RH1560-01-152-0845GF 7RH1560-01-200-4519GF 7RH1560-01-312-3111GF
63 A B C D E F G H	SUU-63 PYLON SUU-63A/A SUU-63C/A SUU-63A/A PYLON SUU-63/A PYLON SUU-63A/A PYLON	74A730101-1021 74A730101-1027 74A730101-1033 74A730101-1041 74A730101-1043 74G730101-1001 74G730101-1003 74G730101-1005	7RH1560-01-200-4518SF 7RH1560-01-248-9212SF 7RH1560-01-316-0507SF 7RH1560-01-424-2869GF 7RH1560-01-424-2868GF 7RH1560-01-442-6398GF 7RH1560-01-248-9212SF

Figure 7-6-1. List of Reportable Aircraft Armament Equipment (Cont'd)

Item Number	Nomenclature	Part No.	NSN
64 A	HARPOON WING STORES	962654-103	
B		962654-104	
C		962654-105	
D		962654-106	
E		962654-107	
F		962654-108	
65 A	WING PYLON ASSEMBLY	931272-103	7RH1095-00-933-2408BP
B		931272-104	7RH1095-00-933-2409BP
C		931272-105	7RH1095-00-933-2410BP
D		931272-106	7RH1095-00-933-2411BP
E		931272-107	7RH1095-00-933-2412BP
F		931272-108	7RH1095-00-933-2413BP
G		931272-109	7RH1095-00-933-2414BP
H		931272-110	7RH1095-00-933-2415BP
I		931272-111	7RH1095-00-933-2416BP
J		931272-112	7RH1095-00-933-2417BP
K		931272-113	
L		931272-114	
66 A	WING PYLON ASSEMBLY	925838-135	7RH1095-00-933-2419BP
B		925838-136	7RH1095-00-933-2420BP
C		925838-137	7RH1095-00-933-2421BP
D		925838-138	7RH1095-00-933-2422BP
E		925838-139	7RH1095-00-933-2423BP
F		925838-140	7RH1095-00-933-2424BP
G		925838-145	7RH1095-00-933-2429BP
H		925838-146	7RH1095-00-933-2430BP
I		925838-147	7RH1095-00-933-2431BP
J		925838-148	7RH1095-00-933-2418BP
K		925838-149	7RH1095-00-574-6935BP
L		925838-150	7RH1095-00-574-6938BP
M		925838-151	7RH1095-00-574-6940BP
N		925838-152	7RH1095-00-574-6946BP
67 A	STANDARDIZED PYLON	972924-101	1095-01-323-2104
68 A	STATION 9 SPACER STANDARD PYLON	972873-101	5365-01-272-3754
B	STATION 10 SPACER STANDARD PYLON	972874-101	5365-01-272-3750
C	STATION 11 SPACER STANDARD PYLON	972875-101	5365-01-272-3752
D	STATION 12 SPACER STANDARD PYLON	972876-101	5365-01-272-3755
E	STATION 13 SPACER STANDARD PYLON	972877-101	5365-01-272-3757
F	STATION 14 SPACER STANDARD PYLON	972877-102	5365-01-287-3998
G	STATION 15 SPACER STANDARD PYLON	972876-102	5365-01-272-3756
H	STATION 16 SPACER STANDARD PYLON	972875-102	5365-01-272-3758
I	STATION 17 SPACER STANDARD PYLON	972874-102	5365-01-272-3751
J	STATION 18 SPACER STANDARD PYLON	972873-102	5365-01-272-3753
69 A	RACK/PYLON	925533-1	1RM1560-00-960-4526BP
B		962035-101	1RM1560-00-613-7482BP
C		925533-103	1RM1560-01-072-7787BP
70 A	PRIMARY PYLON B/SUB FWD	902381-7	
B	PRIMARY PYLON B/SUB AFT	902381-8	

Figure 7-6-1. List of Reportable Aircraft Armament Equipment (Cont'd)

Item Number	Nomenclature	Part No.	NSN
71 A B	A/C PYLON	902381-5 902381-6	9G1560-00-802-3865 9G1560-00-802-3864
72 A	STRUT PYLON A/C	907925-1	1RM1095-00-483-8674BP
73 A	PARTS SET, BOMB RACK LOCK	928597-1	9N5962-00-132-6329
74 A B	SWAY BRACE ASSY BOMB BAY	925469-1 962038-101	1RM1095-00-076-0441BP 1RM1095-00-605-0409BP
75 A	MK-8 MOD 6 BOMB SHACKLE	877AS100	4ZE1095-01-058-6295DH
76 A B	ADU-703 ADU-703A/A	3114AS100 3114AS500	
77 A	ADU-773A/A	74A730501-1003	1440-01-455-3646
78 A	SUU-78A/A CENTERLINE PYLON	74A736001-1007	OQD1560-01-461-7530
79 A B C	SUU-79A/A WING PYLON	74A730401-1013 74A096524-1001 74A096524-1003	ORH1560-01-455-3642
80 A B	SUU-80A/A LOW DRAG PYLON	74A730451-1005 74A096525-1001	ORH1560-01-455-3647

Figure 7-6-1. List of Reportable Aircraft Armament Equipment (Cont'd)

SECTION 8

Armament Weapons Support Equipment

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CHAPTER 8.1

Introduction FST

8.1.1 General. This section addresses maintenance program management of Armament/Weapons Support Equipment (AWSE) which is under the cognizance of the Naval Air Systems Command (COMNAVAIRSYS-COM).

8.1.1.1 Support equipment encompasses all equipment required on the ground to make an aeronautical system, support system, or end item of support equipment operational in its intended environment. This includes all equipment required to guide, control, direct, inspect, test (including test equipment hardware and software), adjust, calibrate, gauge, measure, assemble, disassemble, handle, transport, safeguard, store, actuate, service, repair, overhaul, maintain, or operate the system, subsystem, end item, or component. Support equipment is categorized as common (general purpose) or peculiar (special purpose). AWSE refers to that support equipment (common and peculiar) required to make an aircraft, airborne weapon, aircraft armament, or end item of support equipment (support equipment for support equipment) operational in its intended operational environment. AWSE may be either avionic or nonavionic in design and is further categorized as Armament Support Equipment (ASE), Weapons Support Equipment (WSE), or Logistics Support Equipment (LSE) described below.

8.1.1.2 Maintenance program management is a critical management function to be performed during a weapon system's deployment life cycle phase due to the impact of maintenance requirements on the effective use of personnel, materials, facilities, and fiscal resources. Maintenance program management functions include maintenance planning, coordinating, budgeting, and evaluating program progress.

8.1.1.3 The maintenance (including calibration), inventory control, and reporting of AWSE is integral to maintaining aircraft, airborne weapons, and airborne weapon systems. It is essential that procedures and assigned responsibilities published here be clearly understood and complied with to ensure that maximum AWSE readiness and use are achieved. The objective is to achieve and maintain maximum material readiness, safety, and conservation of AWSE through command attention, policy direction, and appropriate administration by all activities responsible for AWSE. Included are:

- a. Maintenance (including calibration) and repair of AWSE at that level of maintenance which will ensure the best use of resources.
- b. Protection of AWSE from the elements using active cleaning, corrosion control, preservation categories A, B, and C, and storage programs.
- c. Use of a perpetual asset inventory control system.
- d. Collection, analysis, and use of pertinent data in order to effectively improve AWSE material readiness, safety, and use while simultaneously increasing the efficient and economical management of personnel, monetary, and material resources.

8.1.2 Applicability. Programs have been established to standardize maintenance of support equipment. This section discusses the major programs that are interactive with, and applicable to, AWSE. Further, this section discusses maintenance actions peculiar to the maintenance of air launched missile WSE and LSE (containers) used to support the all-up-round air launched missile concept described in paragraph 1.1.7 of this volume. Except where noted, AWSE maintenance functions and reporting requirements are applicable to all levels of maintenance.

8.1.3 Support Equipment Categories. Support equipment types are differentiated according to their ability to support a wide variety of systems or specific systems only (common or peculiar), and whether designed to support avionic or nonavionic equipment functions. Figure 8-1-1 depicts these categorical relationships.

8.1.3.1 Common Support Equipment. Common support equipment is defined as those general purpose items supplying or measuring broad parameters of physical properties known to be established in the using service's inventory. These include ground electrical, pneumatic, and hydraulic power units; towing, hoisting, and fueling devices; signal generation devices; and voltage, amperage, and phase measuring devices. The potential for using support equipment items on other end articles, systems, or components does not, in itself, warrant classification of the AWSE item as common support equipment.

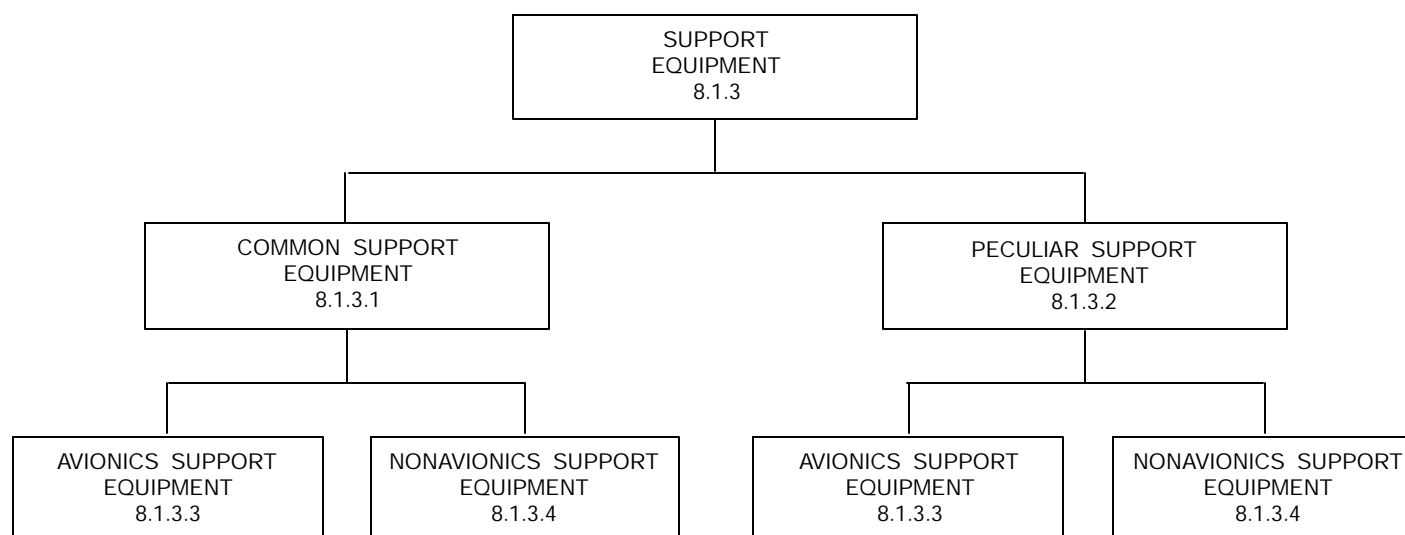


Figure 8-1-1. Support Equipment Breakdown

8.1.3.2 Peculiar Support Equipment. Peculiar support equipment is defined as those special purpose items designed and produced to support a particular weapon system and which do not meet the criteria of common support equipment.

8.1.3.3 Avionic Support Equipment. Avionic support equipment is defined as common or peculiar support equipment of an electronic nature used for, but not limited to, the testing, troubleshooting, alignment, or calibration of airborne weapon systems and components. Examples are general purpose electronic test equipment, missile component test sets, all-up-round automatic test equipment, and missile-on-aircraft-test sets.

8.1.3.4 Nonavionic Support Equipment. Nonavionic support equipment is defined as common or peculiar support equipment that is nonelectronic in nature and may be powered or nonpowered. Examples of powered nonavionic support equipment are mobile electric power plants, gas turbine powered service units, aircraft tow tractors, and bomb hoists. Weapons skids, lifting slings, and missile assembly stands are examples of nonpowered nonavionic support equipment.

8.1.3.5 Exceptions. For purposes of this instruction, the following equipment is excluded from the definition of support equipment.

- a. General use consumables list items, such as powered and nonpowered hand tools.
- b. Office furniture and equipment and items common to all activities defined in applicable allowance lists that are required for indirect support.
- c. Common production tools and tooling such as lathes, drills, presses, plating equipment, grinders, induction heaters, etc.
- d. Items used only by the contractor.
- e. Personal equipment such as head sets, microphones, gloves, protective face masks, etc.

8.1.4 Armament Weapons Support Equipment Categories. In addition to the previously described categories (i.e., common/peculiar, avionic/nonavionic), AWSE is further identified according to functional area of support provided. ASE, WSE, and LSE are described below and their relationships depicted in figure 8-1-2.

8.1.4.1 Armament Support Equipment. ASE includes all equipment whose primary function is support of the aircraft-installed armament system and is used primarily

by organizational (squadron) or intermediate level maintenance activities. ASE is custodied to squadrons and intermediate level maintenance units by types and quantities authorized by the respective activity's Individual Material Readiness List (IMRL) as described later in this chapter. Examples of ASE are bomb hoisting units, loaders, and adapters used to upload/download weapons. ASE is further described as armament handling equipment and armament systems test equipment.

8.1.4.1.1 Armament Handling Equipment. Armament handling equipment are specialized devices used to provide direct support to the aircraft or launch platform. This includes special tools used to move, handle, install, configure, arm, load, and download armament systems or weapons related components. Examples include bomb hoists, linkless ammunition loading system, weapon loaders, and boresights used to remove, replace, repair, test, assemble, or service aircraft bomb racks, missile launchers, installed machine guns, or gun pod units.

8.1.4.1.2 Armament Systems Test Equipment. Armament systems test equipment are devices of electronic design used to test, maintain, or service aircraft armament systems. This includes suspension, arming, releasing, launching, and indicating systems installed either internally or externally on the aircraft or launch platform.

8.1.4.2 Weapons Support Equipment. WSE includes all equipment whose primary function is support of the explosive ordnance component or weapon. Used by organizational, intermediate, and depot level maintenance activities. WSE is divided into two categories: Weapons handling equipment and weapons test equipment.

8.1.4.2.1 Weapons Handling Equipment. Weapons handling equipment is a specialized classification of WSE which provides direct support to the weapon commodity. Weapons handling equipment may be either common or peculiar handling equipment used for canning and decanning, magazine handling, and assembly/disassembly of weapons or ordnance-related commodities. Examples include hoisting beams, weapon carriers, strongbacks, handlift trucks, weapon skids, trailers, bomb trucks (nonself-powered), and their associated weapons assembly tables, maintenance stands, and other weapon-related equipment. Weapons handling equipment supports both air and surface launched weapons.

8.1.4.2.2 Weapons Test Equipment. Weapons test equipment is comprised of specialized devices of an electronic or electrical design used to test, maintain, or service airborne weapons, bombs, rockets, missiles, torpedoes, mines, or any other explosive ordnance.

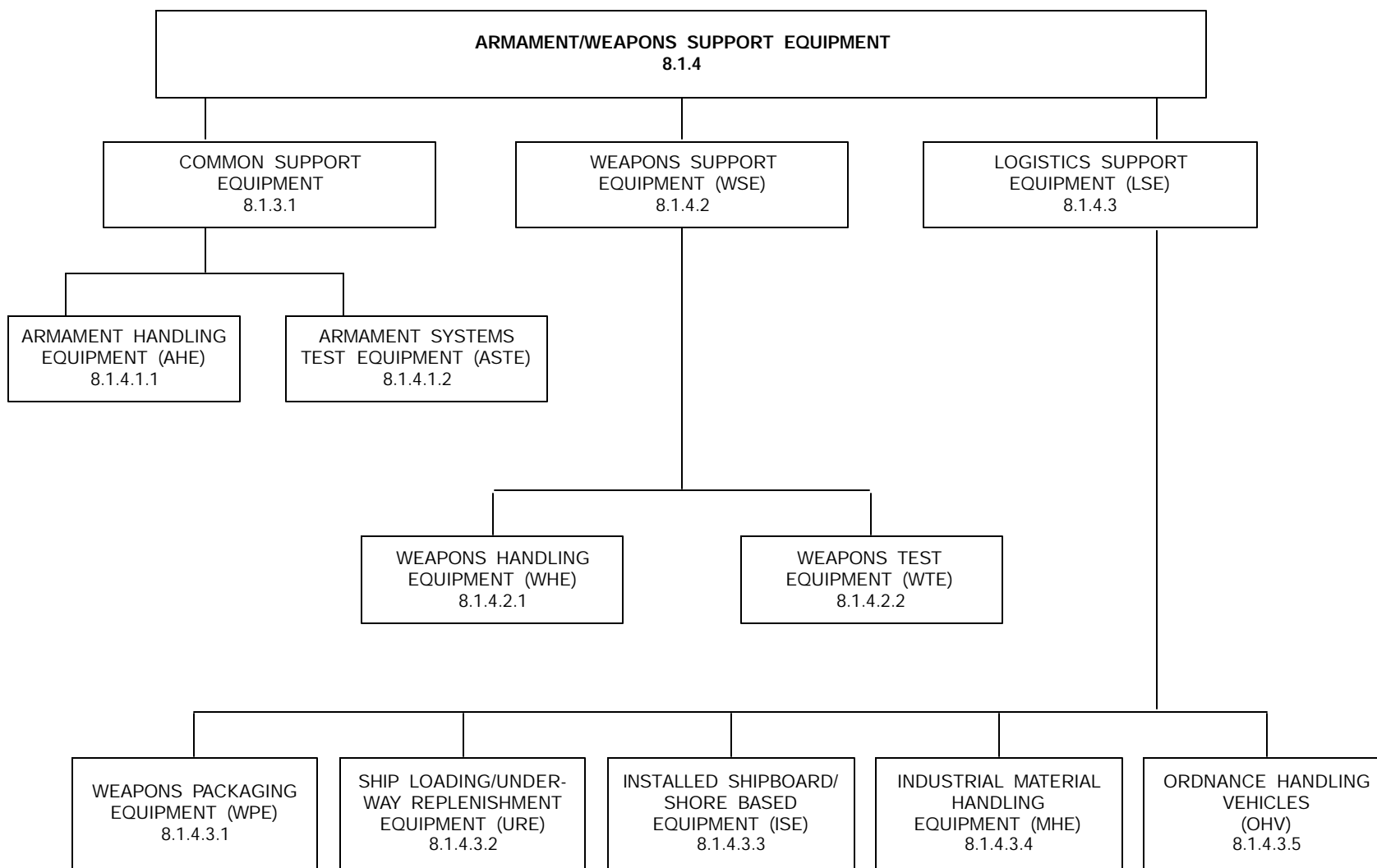


Figure 8-1-2. Armament Weapons Support Equipment Breakdown

8.1.4.3 Logistics Support Equipment. LSE includes all equipment with facility-related functions and is in the custody of many departments. Listed in various allowing documents under the general heading of packaging, handling, storage or stowage, and transportation (PHS&T), LSE consists of that equipment used for the PHS&T of weapons and weapon components within the respective weapons' logistics cycle ranging from manufacturers' sites to the using activities' magazine spaces. LSE includes weapons packaging equipment, ship loading or underway replenishment equipment, installed shipboard or shore-based equipment, and industrial materials handling equipment, each of which is defined below.

8.1.4.3.1 Weapons Packaging Equipment. Weapons packaging equipment encompasses those specialized packaging and restraining devices which provide physical and environmental protection to weapons and explosive ordnance during transit and storage. Examples of weapons packaging equipment include missile containers, pallets, boxes, and fleet issue unit loads containing ordnance and ancillary equipment.

8.1.4.3.1.1 Airborne Weapons Containers. The airborne weapon container is normally a reusable, top-opening, gasket-sealed container used for shipping and storing air launched missiles and their components. Container PHS&T logistics requirements are delineated in MIL-STD-1367.

8.1.4.3.1.2 Policy for Handling Empty Airborne Weapons Containers. All empty containers previously used for the shipment of airborne weapons, ordnance, or ammunition shall be subjected to a 100 percent inspection prior to shipment to other activities for storage, reuse, or salvage. This inspection shall ensure that there are no live ordnance or ammunition in the containers, that the containers are free of foreign matter such as water and debris (other than prescribed interior dunnage), and that the covers are installed and tightly secured. Markings that indicate the presence of airborne weapons, ordnance, or ammunition, such as loading dates, lot numbers, and Department of Transportation markings, must be completely removed or obliterated. Empty containers shall be identified by applying "EMPTY" labels or placards, or by stenciling in 3-inch letters on both sides or ends of the container the word "EMPTY." Paints used are prescribed in NAVAIR 01-1A-75 (Airborne Weapons and Associated Equipment, Consumable Material Applications and Hazardous Material Authorized Use List) (NOTAL). Empty containers shall be reported and dispositioned via transaction item reporting and ammunition transaction reporting, as

appropriate, in accordance with NAVSUP P-724 (NOTAL).

8.1.4.3.2 Ship Loading and Underway Replenishment Equipment. Ship loading and underway replenishment equipment includes specialized handling and transfer devices which provide support to the packaged weapon during ships' loading and underway replenishment operations. Examples of ship loading and underway replenishment equipment include connected replenishment slings, vertical replenishment pole pendants, spreader bars, beams, missile transfer dollies, etc. All equipment is primarily used for ships' loading and unloading and ship-to-ship transfer operations involving general supplies and explosive ordnance commodities.

8.1.4.3.3 Installed Shipboard or Shore-Based Equipment. Installed shipboard or shore-based equipment includes both specialized and general equipment provided as a part of the basic facility which functions in support of weapons handling and transfer operations. Examples of such equipment include mechanical dunnaging, C-grabs, bi-rail or monorail hoists, tie-downs, davits, bomb elevators, conveyors, and other fixed or moveable handling equipment.

8.1.4.3.4 Industrial Material Handling Equipment. Industrial material handling equipment is comprised of commercially available industrial equipment which is approved for use in ammunition and explosive ordnance handling operations. Examples include such items as forklifts, warehouse tractors, pallet trucks, platform trucks, etc.

8.1.4.3.5 Ordnance Handling Vehicles. Ordnance handling vehicles include those vehicles which have been approved for over-the-road transport and handling of ammunition and explosive ordnance. Examples of such equipment include trucks, trailers, bomb service trucks, etc.

8.1.5 Naval Air Systems Command Responsibilities

8.1.5.1 The Support Equipment Program Manager (PMA-260) is responsible for the program management and funding of AWSE maintenance programs. Naval Air Warfare Center is responsible for management, integrated logistics support, and maintenance engineering functions pertinent to the AWSE under PMA-260 cognizance.

8.1.5.2 Responsibilities are determined by the end item (aircraft or weapon) requiring support. NAV-AIRENGSTA Lakehurst is responsible for providing maintenance support for AWSE in which the aircraft

is the end item being supported, while NAVAIRWARCENWPNDIV is responsible for maintenance support of AWSE for which the end item is the weapon. AWSE items required by organizational and intermediate level maintenance activities are generally under the cognizance of NAVAIRENGSTA Lakehurst, while AWSE required to support the weapon at depot level maintenance activities are under the cognizance of NAVAIRWARCENWPNDIV. Both organizations have established methodologies and systems to accomplish the allocation, distribution, tracking, and accountability of AWSE under their respective cognizance. These distinctions are depicted in figure 8-1-3 and discussed in further detail below.

8.1.5.3 Policies, procedures, and responsibilities contained here apply to all Navy and Marine Corps activities concerned with the operation, maintenance (including Calibration), overhaul, control, and support of SE. Various commands are involved in the acquisition, logistic support, and maintenance of SE. Common support equipment (CSE) is managed by the Aviation Support Equipment Program Manager COMNAVAIRSYSCOM (PMA-260). Peculiar support equipment (PSE) is managed by the appropriate Logistics Management Department COMNAVAIRSYSCOM (AIR-3.1) aircraft/weapon system program manager as part of the aircraft/weapon system program. Tasks listed in paragraph 8.1.5.4 a through s, also apply to the management of PSE by the appropriate aircraft/weapon system program manager. The following paragraphs provide an overview of the SE management system by identifying major activities and their responsibilities.

8.1.5.4 COMCOMNAVAIRSYSCOM (PMA-260, as the Aviation SE Program Manager, Shall:

- a. Design, develop, test, evaluate, acquire, and cause delivery of aircraft weapons systems and aeronautical CSE.
- b. Establish new/revised CSE requirements in the Support Equipment Resources Management Information System (SERMIS).
- c. Plan, program, budget, manage, and execute CSE projects to ensure fleet requirements are met.
- d. Use established functional organizations, field activities, laboratories, other appropriate commands and agencies, as well as commercial contractors, in carrying out required plans and programs.

- e. Establish the requirements and procedures to ensure all tasks, efforts, and progress toward accomplishment of CSE program objectives are being conducted by the functional groups, field activities, laboratories, other commands and agencies, and commercial contractors.

- f. Use NAVAIRWARCENS and NAVAVNDEPOTS to execute CSE programs and projects.

- g. Establish plans and procedures for the development and acquisition of Integrated Logistics Support (ILS) for CSE.

- h. Prepare and execute CSE Integrated Logistics Support Plans (ILSPs) and User's Logistics Support Summaries.

- i. Prepare end item CSE maintenance plans.

- j. Ensure Fleet Support Teams (FSTs) are established for all CSE programs.

- k. Provide funding for initial CSE installations.

- l. Plan for and provide technical documentation and training requirements to support CSE maintenance concepts, plans, and procedures.

- m. Provide primary COMCOMNAVAIRSYSCOM headquarters contact for all CSE logistics in support of the fleet, Marine Corps, and field activities.

- n. Work with each aircraft/weapon system program manager to ensure demands and requirements for CSE are fulfilled in a satisfactory manner.

- o. Chair the CSE Configuration Change Control Board.

- p. Function as the centralized SE inventory management authority responsible for coordinating redistribution of in-use assets among the Support Equipment Controlling Authority (SECA), prioritization of SE procurement, and distribution of new SE, as the Primary Support Equipment Controlling Authority (PSECA).

- q. Manage and direct the AMMRL Program.

- r. Establish policies and procedures, and direct the SE Retirement Program.

- s. Act as the focal point on SE policy matters, including ATE and related software.

8.1.5.5 COMCOMNAVAIRSYSCOM (AIR-3.6), as the Logistics Support Department, shall manage and fund the SE Calibration, SE D-Level Rework, and Mobile Facility Programs.

8.1.5.5.1 The Naval Inventory Control Point (NAVICP) shall:

a. Develop and implement policies and procedures relating to SE supply support, including Supply Support Management Plans (SSMPs), Allowance Requirements Registers (ARRs) criteria, interim/augmented support, and stock coordination.

b. Perform material management responsibilities for COMCOMNAVAIRSYSCOM cognizance SE line items.

c. Ensure an adequate quantity of assigned SE is available for distribution under fleet and COMCOMNAVAIRSYSCOM requirements and within available resources.

d. Initiate follow-on procurement for SE.

e. Issue SE, based upon allowances established by COMCOMNAVAIRSYSCOM, and maintain a record of all accountable items for SE released to miscellaneous activities, for example, contractor support programs, loaned, bailment, not assigned to a major operating command, or not under the cognizance of the AMMRL Program for reporting purposes.

8.1.5.5.2 SECA. A term applied to major aviation commands that exercise administrative control of AMMRL Program SE end items for allowance and inventory control. The following is a list of designated SECAs:

a. COMNAVAIRLANT.

b. COMNAVAIRPAC.

c. CNTRA.

d. COMNAVAIRESFOR.

e. NAMTRAGRU.

f. COMCOMNAVAIRSYSCOM.

NOTE

1. COMCOMNAVAIRSYSCOM DET ACC executes the SECA functions for all COMCOMNAVAIRSYSCOM field activities, depots, and for naval weapons stations with support equipment supplied by COMCOMNAVAIRSYSCOM under the scope of the AMMRL Program.

2. PMA-260 executes SECA functions for the Maritime Prepositioning Force and for initial outfitting of new construction ships.

8.1.5.6 The Naval Air Engineering Station, Lakehurst NJ is responsible for:

a. Integrating higher level logistics policy and direction for AWSE into command life cycle logistics doctrine.

b. Providing ILS management direction and procedures.

c. Accomplishing ILS management on all common support equipment, including automatic test equipment, avionics support equipment, and handling, servicing, testing, maintenance, and safety equipment.

d. Accomplishing ILS management on AWSE research and development efforts in the concept and validation phase.

e. Providing maintenance engineering, supply support, and inventory management on all AWSE except WSE.

f. Planning, budgeting, directing, and managing the AWSE rework program, the Metrology Automated System for Uniform Recall and Reporting (MEASURE) Program, the Metrology/Calibration (METCAL) Program, and the Command Mobile Facilities Program in support of designated program offices, other system commands, and other services.

g. Managing the AWSE-peculiar management information system programs and automatic test equipment in-service engineering software program.

h. Monitoring and auditing the effectiveness of AWSE logistics support and support systems in all life cycle phases.

i. Determining the cause(s) of hardware or software problems limiting AWSE readiness.

j. Ensuring that all logistics impacts are identified in engineering change proposals for weapon system-created AWSE changes.

k. Directing that action and funding required to implement approved engineering change proposals and tracking that status of all engineering change proposals through availability, change directive issue, and change incorporation.

8-1-8

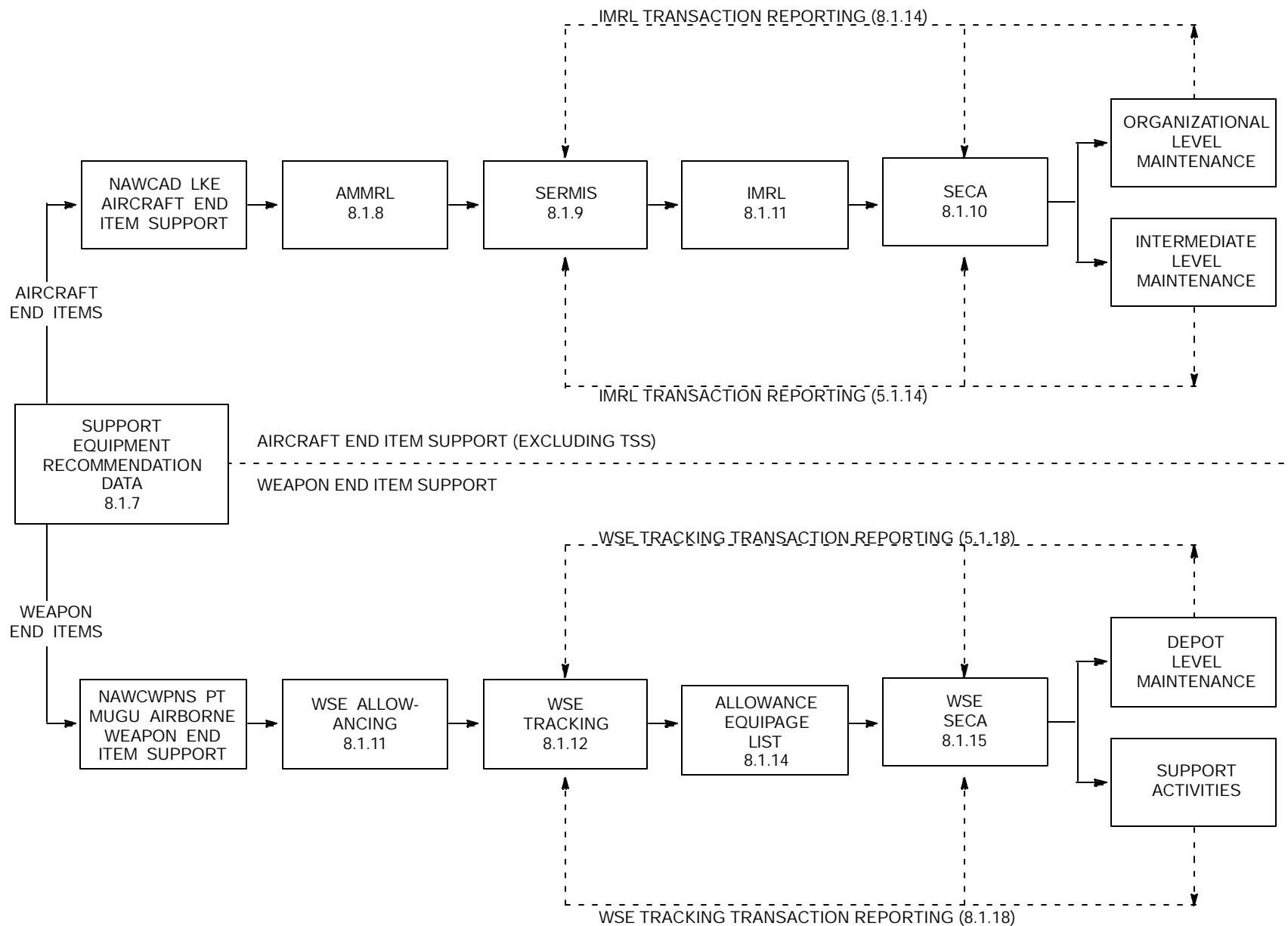


Figure 8-1-7. End Item Support for Armament Weapons Support Equipment

l. Managing the total AWSE modification installation effort from budget formulation through execution.

m. Generating and maintaining AWSE-peculiar data item descriptions.

n. Generating and managing an AWSE financial management accounting system for all budget appropriations.

8.1.5.7 The Naval Air Warfare Center Weapons Division is responsible for integrating higher level logistics policy and direction into command life cycle logistics doctrine and policy for airborne weapons and related WSE. These responsibilities include the following:

a. Providing policy and direction for unique life cycle logistics support and maintenance processes as applied to airborne weapons.

b. Providing life cycle ILS management direction and procedures.

c. Accomplishing ILS management on all airborne weapons and related WSE under the cognizance of COMNAVAIRSYSCOM, including systems procured for other services, agencies, and foreign governments or systems procured for the Navy by another service.

d. Accomplishing ILS management on all command airborne weapons and related WSE research and development effort during the concept exploration and demonstration and validation phases.

e. Providing integration of logistics support with system design.

f. Providing maintenance engineering and ILS management for all airborne weapon systems and WSE being developed.

g. Planning, programming, budgeting, directing, and managing the airborne weapons and WSE rework program.

h. Projecting worldwide maintenance workload for airborne weapons and WSE and making adjustments thereto based on requirements, capability, or corrective action changes through the Master Index of Repairables Program.

i. Monitoring the effectiveness of the logistics support system.

j. Determining the cause of airborne weapons and WSE hardware or software problems limiting readiness and resolving those identified as logistic and maintenance problems.

k. Developing and maintaining ILS data bases and management information systems to effectively manage the logistics status, problem analysis, and cause determination.

l. Ensuring that all logistics impacts are identified in engineering change proposals.

m. Providing maintenance interservice support for airborne weapons, and WSE and programming, budgeting, directing, and managing depot maintenance interservice support program for airborne weapons and WSE for which COMNAVAIRSYSCOM is either principal participant or agent.

n. Providing configuration management and configuration status accounting for assigned out-of-production airborne weapons and WSE.

o. Providing configuration status accounting for airborne weapons and WSE.

p. Ensuring provision of Contractor Engineering Technical Services and Navy Civilian Technical Specialists for fleet support of airborne weapons and WSE.

q. Planning, programming, and budgeting for initial provisioning and reprovisioning in support of airborne weapons and WSE.

r. Performing inventory management of cognizant COMNAVAIRSYSCOM material.

s. Exercising administrative and inventory control over 8E cognizance air launched missile containers.

t. Implementing, coordinating, and controlling container maintenance data system reporting programs.

u. Proposing, processing, and implementing changes or revisions to maintenance directives applicable to the container maintenance program.

8.1.5.8 Functionally, logistics managers (LM) and assistant program managers, logistics (APML) plan and implement integrated logistic support and project support management activities for major weapon systems. LMs and APMLs are responsible directly to weapon system program managers, air or air program coordinators for logistics aspects of acquisition programs from inception through deployment and eventual phaseout from the active inventory. LMs and APMLs are directly responsible to their respective division directors for the effective planning and development of operationally effective and cost-effective support systems for acquisition programs.

8.1.5.9 There are some AWSE programs requiring joint support by both NAWCAD and NAWCWPNS. For exam-

ple, since it is an aircraft end item, aircraft gun system armament systems test equipment is allocated, distributed, and tracked through the Aircraft Maintenance and Material Readiness List (AMMRL) Program.

8.1.6 Responsibilities of Supporting Activities

8.1.6.1 The Chief of Naval Education and Training (CNET):

a. Develops required organizational and intermediate level support equipment maintenance training courses for user activities.

b. Through the naval air maintenance training group, assists Support Equipment Controlling Authorities (SECA) and other activities in implementing training programs as funded by COMNAVAIRSYSCOM.

c. Conducts support equipment maintenance, maintenance data system, and AMMRL training in formal schools.

8.1.6.2 The reporting custodians, including Commander, Naval Surface Force, Atlantic (COMNAVSURFLANT), Commander, Naval Air Force, Atlantic (COMNAVAIRLANT), Commander, Naval Air Force, Pacific (COMNAVAIRPAC), Commander, Naval Air Reserve Force (COMNAVAIRESFOR), and Commander, Naval Surface Force, Pacific (COMNAVSURFPAC) activities, assume the following responsibilities for support equipment listed in their IMRLs:

a. Ensure that all maintenance and calibration requirements are accomplished.

b. Ensure that utilization goals are achieved, if established.

c. Report maintenance data system and support equipment transactions.

d. Be responsible for material condition of support equipment, including adequate protection from the overall environment.

e. Accomplish, record, and report technical directive compliance using the maintenance data system.

f. Establish and maintain support equipment inventory control reporting.

g. Conduct physical IMRL inventories annually and as directed by the SECA. Ensure excess support equipment is reported to the SECA with a request for disposition instructions. Unless otherwise authorized by the

SECA, ensure excess equipment is transferred to the supply system under NAVAIRINST 13650.1C.

h. Review the IMRL frequently, with emphasis on the evaluation of support equipment allowances to ensure that allowances remain consistent with the actual maintenance support requirement. Submit all reports concerning support equipment inventory, support equipment transactions, and proposed changes to support equipment allowances, following NAVAIRINST 13650.1C (NOTAL) and SECA instructions.

i. Ensure all requisitions for reportable IMRL support equipment, including that which is in excess of authorized allowance, or which is not listed in the activity's IMRL as an authorized item, are submitted via the SECA. The requisition must contain full justification of the requirement for such support equipment.

j. Issue support equipment licenses.

k. Subcustody support equipment to supported activities for their use.

l. Review applicable activity operating and maintenance procedures for support equipment subcustodied to them.

m. Perform maintenance and submit maintenance data system reports on supported activities' IMRL support equipment.

n. Conduct support equipment training to qualify operators under approved syllabuses.

o. Conduct support equipment personnel and facility requirements planning.

8.1.6.3 The Naval Air Systems Command:

a. Assumes SECA functions for support equipment assigned to COMNAVAIRSYSCOM activities.

b. Manages and carries out AMMRL Program functions under NAVAIRINST 13650.1C (NOTAL).

8.1.6.4 Naval Aviation Depots. The commanding officer is responsible for depot level rework, modification, and calibration of support equipment scheduled into the naval aviation depot under NAVAIRINST 13640.1A (NOTAL). The following actions are taken to fulfill this responsibility:

a. Designate a support equipment coordinator.

b. Act as the maintenance engineering cognizant field activity for peculiar support equipment for assigned weapon systems and equipment.

c. Using milestone charts, plan the rework capability to meet scheduled requirements and obtain all publications, drawings, training, and skills required, when designated by the COMNAVAIRSYSCOM Integrated Logistics Support Plan or Operational Logistics Support Plan as designated rework point for support equipment end items or components.

d. Ensure examination and evaluation is performed on all support equipment upon arrival at the depot; that all required material and all outstanding support equipment is ordered; and that all applicable approved changes are scheduled for incorporation during rework.

e. Ensure all support equipment rework modification and calibration efforts are documented and that the support equipment custody and maintenance history record (OPNAV 4790/51) is received, updated, and accompanies each item of support equipment that is reworked, modified, or repaired. Initiate new records and forms whenever efforts to obtain records or forms from the previous reporting custodian are not successful.

f. Ensure support equipment rework and calibration records are maintained and reports provided as required.

8.1.6.5 Inventory Control Point (ICP) and Program Support ICP. Support equipment ICPs are activities that are assigned material management responsibility for end items of support equipment. All ICPs are responsible for computing support equipment requirements and procuring assigned end items to fill requirements. The program support ICPs are the NAVICPs Philadelphia and Mechanicsburg PA.

8.1.6.5.1 The ICP shall:

a. Ensure an adequate quantity of assigned support equipment is available for distribution under fleet and COMNAVAIRSYSCOM requirements and within available resources.

b. Initiate follow-on procurement for assigned support equipment.

c. Issue support equipment, based upon allowances established by COMNAVAIRSYSCOM, and maintain a

record of all accountable items of support equipment released to miscellaneous activities. For example, for contractor support programs, loaned, bailment, not assigned to a major operating command, or not under the cognizance of the AMMRL Program for reporting purposes.

8.1.6.5.2 The program support ICPs shall:

a. Provision, procure, and distribute repair parts for assigned support equipment.

b. Maintain lists and provisioning codes for repair parts for assigned support equipment.

c. Ensure that supply support requests for repair parts not managed by the program support ICP are accepted by the assigned ICP.

d. Prepare supply support management plans and milestone charts for COMNAVAIRSYSCOM.

e. Prepare allowance requirements registers and equipment reference lists for interim spare part support of support equipment and aviation consolidated allowance lists.

8.1.6.6 Field Activities. Fleet Support Team (FST) perform specified maintenance engineering functions for support equipment. Under the auspices of COMNAVAIRSYSCOM, FSTs provide technical assistance; perform engineering investigations; review and take action on beneficial suggestions; maintain out-of-production technical manuals and maintenance requirement cards; process Quality Deficiency Reports, Hazardous Material Reports, and recommendations; and develop engineering change proposals for correction of reported AWSE design or operating deficiencies.

8.1.6.6.1 FSTs for Support Equipment. The Naval Warfare Center Aircraft Division Lakehurst is the FST for most common support equipment, less calibration standards. NAWCAD coordinates test and measurement equipment space, power, and environmental requirements for all ships which operate aircraft. Further, NAWCAD is responsible for specified AWSE engineering, acquisition, and integrated logistics support tasks.

8.1.6.6.2 Other Supporting Activities. Several field activities provide specialized support for support equipment.

a. The Naval Air Technical Data and Engineering Services Command provides project coordination for the acquisition, distribution, and maintenance of technical data for support equipment.

b. The Naval Air Warfare Center Aircraft Division, Systems Engineering Test Directorate, Ground Support Systems Branch conducts test and evaluations of support equipment including supportability evaluations of AWSE for use aboard aircraft carriers and other aviation capable ships.

c. The Naval Air Technical Data and Engineering Services Command provides field engineering assistance and instruction for the maintenance, repair, and operation of support equipment.

d. The Metrology Engineering Branch located at the Naval Warfare Assessment Station, Corona, CA, is under the management control of the Naval Sea Systems Command (COMNAVSEASYS COM) and provides technical guidance to the Metrology and Calibration Program. Metrology Engineering Branch support for COMNAV-AIRSYS COM AWSE has been coordinated with and authorized by COMNAVSEASYS COM to provide support equipment calibration procedures, technical guidance, and services as required.

8.1.7 Support Equipment Recommendation Data. SERD establishes and identifies all support equipment required to support the airborne weapon from its initial Navy receipt through aircraft installation and checkout. Approved SERD documents establish AWSE requirements and allowances at all maintenance levels regardless of end item application (aircraft or weapon). SERDs are compiled in accordance with MIL-STD-2097 (NOTAL) and are updated throughout the weapon's life cycle.

8.1.8 Aircraft Maintenance Material Readiness List (AMMRL) Program. The AMMRL Program implements the SERD elements and provides for the development of documentation needed to determine and establish requirements and inventory control of aircraft support equipment. Support equipment allowances are developed through the AMMRL Program which enables effective management of support equipment at all levels of maintenance. The program also provides data for management of automatic test equipment related test program sets. The program is involved with over 27,000 end items of aircraft maintenance support equipment (IMRL items) and 10,000 items of test program sets elements (Tailored

Outfitting List items) that are used throughout the Navy by aviation maintenance activities. The procedures for allowance and inventory control of IMRL items are defined in NAVAIRINST 13650.1C (NOTAL). The program recognizes the many ship and baseloading combinations and various requirements for numerous airframe configurations, power plants, and avionics systems. The AMMRL Program is comprised of two elements: the Support Equipment Resources Management Information System (SERMIS) and the IMRL, discussed in paragraphs 8.1.9 and 8.1.10, respectively. Through automated data processing, the AMMRL Program records, stores, and recalls preestablished support equipment application data which is used to prepare the IMRL. The objective of the AMMRL Program is to document technical and cataloging data and in-use asset information concerning IMRL and Tailored Outfitting List items which can be used by management for the following purposes:

a. To determine and establish allowance requirements for support equipment at activities performing airborne weapons maintenance and training.

b. To provide standardized accounting and inventory control procedures.

c. To assist in the redistribution of in-use assets.

d. To provide a base for budgeting requirements.

e. To assist in measuring material readiness.

8.1.9 Support Equipment Resources Management Information System (SERMIS)

8.1.9.1 SERMIS is an automated data processing system which replaced the Application Data Material Readiness files of the AMMRL Program. The SERMIS system provides SECAs with online visibility of source, allowance, inventory, and rework data to aid in inventory control. It is the repository of master support equipment and AWSE data for IMRL printing by SECAs and provides allowance and on-hand in-use asset visibility to maintenance support points at the NAVICPs Philadelphia and Mechanicsburg PA, the Naval Aviation Depot Center, the Naval Air Warfare Center Weapons Division, and COMNAVAIRSYS COM.

8.1.9.2 The SERMIS utilizes a central data base located at the Navy Regional Automation Center, New Orleans, LA. From that data base, online capability is provided to the user through the use of SERMIS terminals at the user sites. Connection between the SERMIS data base and user terminals is accomplished by using the defense data network or telephone lines. Using those methods and local Navy regional automation centers as intermediate

data links as appropriate, the SERMIS provides an interactive capability to key AMMRL Program management officials.

8.1.9.3 All SERMIS data are available to users through online queries, requested reports, and scheduled reports. However, the capability to add, delete, or revise data in any way is stringently controlled and resides only with those organizations who are authorized and individuals in those organizations who are qualified and designated by that organization. The ability of the SERMIS to edit and validate data is essential to the AMMRL Program. Details on maintenance and use of SERMIS and system products are contained in the SERMIS user's manual (NAVAVN-LOGCEN Document No. M-050 UM-02) (NOTAL), the SERMIS requirements document, the SERMIS functional description, NAVAIRINST 13650.1C (NOTAL), and SECA implementing instructions.

8.1.10 Individual Material Readiness List (IMRL)

8.1.10.1 An IMRL is a consolidated allowance list specifying authorized quantities of support equipment and AWSE end items required by a particular maintenance activity to perform its assigned end mission. An IMRL is constructed for all Navy and Marine Corps aviation maintenance activities by extracting applicable portions of SERMIS data. The on-hand quantity listed in the IMRL is based on reports of IMRL item transactions and physical inventories. Data are compiled and maintained to determine material supportability for each IMRL activity. The data are also consolidated to produce functional Navy-wide listings. IMRLs identify material requirements and provide a basis for support equipment procurement and management. That information aids decisions regarding overall readiness posture, budget forecasts, equipment procurement, and redistribution of assets.

8.1.10.2 The IMRL Program is designed to ensure that required support equipment is available in the workcenter. That is done by simultaneously updating a master IMRL of all support equipment assigned to the workcenter. In support of the IMRL Program, the workcenter supervisor shall:

a. Review appropriate maintenance instruction manuals to compare the work center's IMRL with the list of required support equipment to ensure the proper support equipment is available. If the review shows that a required item of support equipment, or suitable alternate, is not available nor listed in the IMRL, but is a valid requirement, the work center supervisor will initiate an IMRL change request to obtain that item of support equipment.

b. Notify the IMRL manager of any deletions, additions, or corrections to the IMRL to ensure the required equipment is on hand.

c. Assist the IMRL manager in the annual wall-to-wall inventory and other inventories as directed.

d. Initiate surveys on any IMRL item, in custody, which is lost or no longer serviceable. Survey procedures are described in paragraph 8.1.19.

e. Be directly responsible for ensuring that IMRL items assigned to the workcenter are complete and functional, and that all workcenter personnel are completely familiar with the application and use of the equipment.

8.1.10.3 NAVAIRINST 13650.1C (NOTAL) provides policy and procedures for allowance and inventory control of support equipment. It also establishes an inventory reporting system and inventory reporting requirements for support equipment. The reports provide the SECAs with visibility for support equipment distribution and redistribution decisions and the various inventory managers with usage data on which to base procurement decisions.

8.1.11 IMRL Transaction Reporting

8.1.11.1 Transaction reporting, commonly referred to as IMRL transaction reporting, is the method of reporting support equipment gains, transfers, reidentification, and surveys by an IMRL activity. The support equipment transaction report (OPNAV 4790/64) is specifically designed for the AMMRL Program in-use inventory management and reporting system and is used by each Navy and Marine Corps aircraft maintenance activity or component for which an IMRL is prepared and issued (component activities include maintenance facilities, squadron detachments, naval air maintenance training detachments, etc.). The support equipment transaction report is a four-part, interleaved carbon set, designed so that all information is reproduced on all copies. The form is divided into two portions. The left-hand portion pertains to support equipment transaction reporting and the closed loop subsystem. The right-hand portion pertains to support equipment subcustody issue and control. Detailed procedures and guidance are further amplified in SECA instructions. Appendix H, pages H-7 through H-9, contains instructions for preparation of the support equipment transaction report.

8.1.11.2 Requirements for support equipment transaction reporting are similar for all SECAs, however, their instructions should be consulted for details. Although continuous management control of support equipment is maintained by timely submission of transaction reports,

an annual inventory of support equipment must be conducted, records corrected, and a report submitted. The annual physical inventory may be conducted any time during the calendar year at the discretion of the SECA. The inventory must be a wall-to-wall inventory, conducted by a team composed of personnel who are knowledgeable in identifying all types of support equipment. The results of the physical inventory will be matched against the activity's custody records. All discrepancies are investigated and differences reported by transaction report. Written reports are submitted to the SECA via the chain of command.

8.1.12 Support Equipment Controlling Authority (SECA)

8.1.12.1 SECAs exercise administrative control of AWSE end items for allowance and inventory control. Major SECA responsibilities include:

- a. Issue and control the distribution of AWSE within commands. Where possible, the SECA minimize logistic support requirements by using baseloading techniques, for example, placing like items of AWSE at a single site.
- b. Implement, coordinate, and control maintenance, inventory control, and maintenance data system reporting programs for AWSE within their command.
- c. Manage the intermediate level maintenance calibration program and implements policies within their command.
- d. Propose and process recommended changes or revisions to maintenance directives for AWSE.
- e. Propose and process recommendations for new AWSE.
- f. Schedule and maintain IMRLs for all applicable Navy and Marine Corps aircraft maintenance activities using guidance provided by COMNAVAIRSYSCOM.
- g. Propose and process recommendations for changes to AWSE allowances and provides management coordination for proper execution of the AMMRL Program under NAVAIRINST 13650.1C (NOTAL).
- h. Implement and monitor fleet AWSE training programs for both operation and maintenance of AWSE.
- i. Review and validate all requisitions submitted by subordinate activities for IMRL reportable AWSE prior to submission to the supply system.

j. IMRL Cumulative Allowance Summary. The IMRL cumulative allowance summary is a monthly change notice that is prepared and issued for each IMRL activity by the cognizant SECA. Beginning the first month after an IMRL is prepared and every month thereafter, the cumulative allowance supplement for that IMRL will list all allowance changes to date. On the second and subsequent cumulative allowance supplements for each IMRL, an asterisk will appear in the first column of the line item to differentiate changes which have occurred in the current month from those previously appearing in the cumulative supplement. An update action code is used on the cumulative allowance supplement to show additions, deletions, or changes that affect an activity. The update action codes for the cumulative allowance supplement are the same as those used on the IMRL change list.

8.1.12.2 The following is a list of designated SECAs:

- a. Commander, Naval Air Force, Atlantic.
- b. Commander, Naval Air Force, Pacific.
- c. Chief of Naval Air Training.
- d. Commander, Naval Air Reserve Force.
- e. Commander, Naval Air Systems Command.
- f. Naval Air Maintenance Training Group.
- g. Commander, Naval Surface Forces, Atlantic.
- h. Commander, Naval Surface Forces, Pacific.

8.1.13 WSE Allowancing. The WSE allowancing program implements the SERD and provides for development of documentation needed to determine and establish requirements and inventory control of WSE. Allocations are developed through the WSE allowancing program which enables effective management of WSE at depot level maintenance and key support activities. WSE allowances are established by the cognizant COMNAVAIRSYSCOM (AIR-3.1) APML based on the requirements of the respective program's integrated logistics support plan (ILSP). Through automated data processing (WSE tracking), the WSE allowancing program records, stores, and recalls preestablished WSE application data which reflects the individual activity's Allowance Equipage List (AEL). The objective of the WSE allowancing program is to document in-use asset information which can be used by management to:

- a. Determine and establish allowance requirements for WSE at activities performing airborne weapons maintenance.

- b. Provide standardized accounting and inventory control procedures.
- c. Assist in the redistribution of in-use assets.
- d. Provide a base for budgeting requirements.
- e. Assist in measuring material readiness.

8.1.14 WSE Tracking Program

8.1.14.1 WSE program inventory and transaction data is tracked through the WSE tracking file. The WSE tracking data file contains over 3,000 items of WSE and provides online visibility of the WSE inventory under COMNAVAIRSYSCOM (AIR-3.1) cognizance which has been allocated to depot level maintenance activities (organic and commercial) and key support sites. WSE inventory custodians submit mandatory WSE transaction reports whenever:

- a. A WSE gain or loss occurs.
- b. A transfer of WSE assets between activities occurs.
- c. WSE status changes of condition coding to show availability of assets and production support.

8.1.14.2 Naval Air Warfare Center Weapons Division, Point Mugu (Code 361000E) is COMNAVAIRSYSCOM's (AIR-3.1) designated agent for maintaining the master inventory accounting data file of WSE tracking. As such, the Naval Air Warfare Center Weapons Division, Point Mugu is responsible for integrating all new WSE activity allocations into the WSE tracking file as well as providing WSE tracking updates as a result of WSE transaction reports.

8.1.15 WSE Tracking Transaction Reporting. Activities holding WSE under COMNAVAIRSYSCOM cognizance are required to report WSE inventory transactions to the Naval Air Warfare Center Weapons Division, Point Mugu (Code 361000E). WSE transactions may be reported by either of the following methods:

- a. Activities having access to the AWIS network utilize that system for reporting WSE transactions in accordance with the report format depicted in figure 8-1-4.
- b. Activities not integrated into MARS shall report WSE transactions by letter or message in conformance with the content and format of figure 8-1-4.

8.1.16 Allowance Equipage List. NAVICP Mechanicsburg PA prepares and maintains the AELs for all air-

borne weapons. In consonance with the AIR-3.1 APML's ILSP, the AEL serves as an allowance and inventory record of WSE required at an activity to support a particular airborne weapon system. The AEL also identifies material requirements and provides a measure of supportability for WSE maintenance by identifying authorized WSE allowances and inventories which are tailored to the respective supporting maintenance level activity. AELs are updated via the WSE tracking file discussed above.

8.1.17 WSE SECA Responsibilities. The SECA for WSE is NAVAIR AIR-3.1.1. AIR-3.1.1 APMLs issue, control, distribute, or redistribute WSE under their cognizance throughout the airborne weapon's life cycle as program support requirements dictate to ensure optimum use of WSE in support of the Chief of Naval Operation's established asset readiness objective. SECA responsibilities include:

- a. Initial distribution and control of the WSE assets to participating commands.
- b. Implementation, coordination, and control of maintenance, inventory control, and maintenance data system reporting programs for WSE.
- c. Proposes and processes recommended changes and revisions to maintenance directives for WSE.
- d. Proposes and processes recommendations for new WSE.
- e. Proposes and processes recommendations for changes to WSE allowances and provides management coordination to assure execution.
- f. Implements and monitors WSE training programs for both operation and maintenance of WSE.

8.1.18 Standard Support Equipment Programs Applicable to AWSE. Standardized programs established for the maintenance of Navy support equipment that are interactive with AWSE maintenance include the planned maintenance system for aeronautical equipment, metrology and calibration program, support equipment licensing, and the fluid handling program. A brief discussion of each of these programs follows.

8.1.18.1 Planned Maintenance System. The planned maintenance system promulgated by OPNAVINST 4790.2H (NOTAL) is a scheduled maintenance program which formally ensures that aeronautical equipment is maintained throughout its life cycle by controlling degradation resulting from time, operational cycles, use, or climatic exposure. Many separate but interrelated functions are combined to make up the maintenance workload in support of aircraft and aeronautical equipment. The lim-

ited time available for performing maintenance does not allow these tasks to be considered, planned, and performed on an individual basis. They must be combined and sequenced properly if the overall job is to be done efficiently. The best possible use of time, manpower, materials, and funds is mandatory if maximum equipment availability and use are to be realized. Properly conducted, the planned maintenance system ensures that all aeronautical equipment receives the required necessary servicing, preventive maintenance, and inspections. The purpose of the planned maintenance system is to simplify complex maintenance tasks.

8.1.18.1.1 Scheduled maintenance requirements ensure timely discovery and correction of defects. Reporting custodians may increase the depth and frequency of any scheduled inspection or require additional inspections whenever excessive time has elapsed between inspections, or when environmental or operational conditions are considered to have impaired the material reliability or integrity of the equipment. Inspections performed to a greater depth or at an increased frequency are logged, if required, as the type which would normally be performed and do not alter the schedule of the programmed inspections.

8.1.18.1.2 Planned maintenance system publications consist of checklists, maintenance requirement cards, periodic maintenance information cards, sequence control charts or cards, and standard depot level maintenance specifications which are established by direction of COMNAVAIRSYSCOM. These publications provide a basis for planning, scheduling, and executing scheduled maintenance requirements. The requirements are sched-

uled with intervals such as calendar time, flight and operation hours, or number of cycles and events based on the predominant failure mode. In instances where a conflict exists between planned maintenance system publications and other directives, the planned maintenance system publications take precedence.

8.1.18.2 Metrology and Calibration Program. Calibration is the process by which the performance of units of calibratable support equipment is compared and adjusted (calibrated) to that of equipment (metrology standards) of higher accuracy to ensure that the support equipment or precision measuring equipment is operating within established tolerance limits. Metrology standards are calibrated by standards of higher accuracy in upper echelon calibration laboratories until traceability to national standards maintained by the National Bureau of Standards and the U.S. Naval Observatory is achieved. Items requiring calibration are listed in NAVAIR 17-35MTL-1 (Metrology Requirements List) (NOTAL). Equipment requiring periodic calibration is scheduled into an appropriate calibration facility or laboratory. The recall of equipment for calibration at established intervals is facilitated by the Metrology Automated System for Uniform Recall and Reporting (MEASURE), which provides management information and data required to develop recall schedules. MEASURE operational control centers (Norfolk and San Diego) publish and monitor equipment recall schedules and allocate resources to carry out the schedules. The MEASURE Users Manual is the policy and procedures document for the Metrology and Calibration Program. Requests for copies of the MEASURE Users Manual, as well as questions concerning the Metrology and Calibration Program, should be addressed to the nearest MEASURE operational control center.

NAVAIR: NAWCWPNS, Point Mugu LETTER NO. 555555 DATE 01MAR94

SYSTEM: WSE Inventory Accounting System

SUBJECT: ALM WSE Asset/Inventory Transaction Report

	<u>ACTIVITY</u>	<u>CODE</u>	<u>NAME</u>
ORIGINATOR:	Reporting Activity	Activity Code	SE Manager
DESTINATION:	NAWCWPNS, Point Mugu	(CLE Code)	SE Manager
	NAVAIR	(APML Code)	(APML Name)
	Transfer/Receipt Activity	Activity Code	SE Manager

AUTHORITY FOR TRANSACTION: (APML)

TRANSACTION NUMBER: (If appropriate)

TYPE OF TRANSACTION: (ck) () Transfer to _____.
 () Receipt from _____. () Receipt new asset _____.
 () Change status from condition _____ to condition _____.

EQUIPMENT STATUS CODES REQUIRED TO SUPPORT PRODUCTION

0 - 1	Operational.
0 - 2	Requires Calibration/Certification.
0 - 3	Requires Local Repair.
0 - 4	Requires Parts.
0 - 5	Requires Depot Level Repair.

ASSET: P/N
 NSN
 SN
 Nomenclature

Figure 8-1-4. Sample Weapons Support Equipment Tracking Transaction Report

8.1.18.3 Support Equipment Licensing. A support equipment operator's license (OPNAV 4790/102) is required of all personnel who operate support equipment, regardless of rate or rating. Figure 8-1-5 lists support equipment which requires a support equipment operator's license. The support equipment training and licensing program formalizes the support equipment operator and organizational maintenance training and licensing program and addresses responsibilities and procedures required for program support. The improper use of support equipment has resulted in excessive ground handling accidents, repair, and replacement costs amounting to millions of dollars annually and reduced operational readiness. The major reasons for improper use of support equipment are lack of effective training of the individuals who operate and maintain the equipment and a lack of supervision or leadership by the officers responsible for operation and maintenance of support within the organization.

8.1.18.4 Fluid Handling Programs. Various consumables such as fuel, oil, oxygen, and hydraulic fluid are used in AWSE for servicing and maintaining aeronautical equipment and airborne weapons. Because of the hazardous nature and susceptibility to contamination of these fluids, it is imperative that personnel associated with such operations have a thorough knowledge of them. OPNAVINST 4790.2H (NOTAL) establishes formal surveillance programs to achieve and maintain a satisfactory degree of fluid purity in the respective end items and AWSE. Compliance by all Navy and Marine Corps activities operating or maintaining aeronautical equipment is mandatory. Sampling requirements and procedures shall be specified in the respective equipment's or weapon system's MRCs, MIMs, or technical manuals. The FST shall conduct continuing engineering reviews and evaluations to determine program effectiveness. Detailed characteristics, handling procedures, sampling, and contamination limits shall be included in each activity's support equipment training syllabus.

8.1.18.4.1 The prime objective of this program is to achieve and maintain a satisfactory level of fluid purity in hydraulic systems, thereby providing for safe and efficient operation of naval aircraft and support equipment. Additionally, the program addresses those

requirements which will provide the design requirements, technical documentation, training, maintenance practices, standards, and equipment which will ensure that the Navy standard class 3 or cleaner contamination level is maintained for support equipment as defined in NAVAIR 01-1A-17 (NOTAL).

8.1.18.4.2 Maintaining acceptable contamination levels is assured, in part, by means of a fluid surveillance program wherein hydraulic fluid from all operating equipment is sampled and tested on a periodic basis, whenever excessive contamination is suspected, and subsequent to major hydraulic system maintenance. When equipment fails to meet Navy standard cleanliness levels, decontamination procedures shall be used to restore the affected system to an acceptable level.

8.1.18.5 Source, Maintenance, and Recoverability (SM&R) Codes

8.1.18.5.1 Source, Maintenance, and Recoverability Codes (SM&R) codes are used to communicate maintenance and supply instructions to various logistic support levels and using commands for the logistic support of systems, equipment, and end items. These codes are made available to their intended users by means of technical publications such as allowance lists, illustrated parts breakdown manuals, maintenance instruction manuals, and supply documents. SM&R codes are assigned to each supported item based on the logistics support planned for the end item and its components.

8.1.18.5.2 The primary objective is to establish uniform policies, procedures, management tools, and means of communication that will promote interservice and integrated material support within and among the military services. Thus, the establishment of uniform SM&R codes is an essential step toward improving overall capabilities for more effective interservice and integrated support.

8.1.18.5.3 For additional specific information concerning policies, procedures, and responsibilities applicable to SM&R codes, see OPNAVINST 5090.1B (NOTAL), NAVAIRINST 4423.11 (NOTAL), and NAVSUPINST 4423.14B (NOTAL).

Course No.	Equipment	Course No.	Equipment
C-600-3218	MB-1A Aircraft Crash Crane	C-600-3276	NR-5C Mobile Air Conditioner
C-600-3220	NC-10 (Sun) Mobile Elect. Power Plant	C-600-3278	TA-75A/B/C Tow Tractor
C-600-3221	MD-3/3A/3B/TD-80 Tow Tractor and Encl.	C-600-3279	MMG-1/1A Mobile Elect. Power Plant
C-600-3223	GTC-85/GTE 85-1	C-600-3281	A/S 32A-30 SE Tow Tractor
C-600-3226	NR-2A (Chase) Mobile Air Cond.	C-600-3282	NC-10C Mobile Elect. Power Plant
C-600-3229	E-APU Mobile Elect. Power Plant	C-600-3283	Aviation SE Forklift Operator
C-600-3231	NC-12A Mobile Elect. Power Plant	C-601-3141	A/M37T-17(V) Turboshaft Eng. (CPW06 Trailer Mounted) Test Stand
C-600-3234	Gaseous Oxygen Servicing Trailer	C-601-3144	T76 Trailer Mounted Eng. Test Stand (P/N 285270-1-1)
C-600-3235	Liquid Oxygen Servicing Trailer, Types 4 and TMU-70/M	C-601-3146	T56 Eng. (6799207/6872153) Mobile Eng. Test Stand
C-600-3242	T-180-F Tow Tractor	C-601-3154	A/E37T-26 Test Stand
C-600-3243	RCPT-105 Trailer Mounted Gas	C-601-3155	A/W37T-1 Turbojet/Fan Eng. Test System
C-600-3245	Turbine Eng. Drive Auxiliary Set	C-601-3156	A/E37T-17 Turboshaft Eng. Test System
C-600-3250	VACU-Blast Junior Dry Toner	C-601-3157	A/E37T-14 Turbojet/Fan Eng. Test System
C-600-3251	PN-2/MA-2 Preservation/Depreservation Machine	C-601-3164	A/M37T-13 Turbojet/Fan Mobile Eng. Test System
C-600-3251	BT-400-10 (Nelson) Preheater	C-601-3167	A/E37T-24 Turboshaft Eng. Test System
C-600-3253	A/S-32K-1C SATS Weapons Loader	C-601-3168	A/M37T-17 Turboshaft Eng. Test System
C-600-3254	AERO 47 A1 Weapons Loader	C-601-3169	A/M37T-18(V) T58/T64 Turboshaft Eng. Mobile Test System (P/N 21C1250G005/5A)
C-600-3257	NC-2A Mobile Elect. Power Plant	C-601-3193	A/M37T-14 Portable Universal Eng. Run-up Test System
C-600-3258	NR-10 Mobile Air Conditioner	C-601-4126	A/F32T-6/6A Turbojet/Fan Eng. Test System
C-600-3260	AHT63/64 Hydraulic Test Stand		
C-600-3262	NR-8/A/M32C-17 Mobile Air Cond.		
C-600-3264	SD-1D Aircraft Spotting Dolly		
C-600-3266	NS-50 Aircraft Crash Crane		
C-600-3271	NC-8A Mobile Elect. Power Plant		
C-600-3272	NAN-2, 2A, 3 Nitrogen Servicing Trailers; and High Pressure Nitrogen Cylinders		
C-600-3274	NCPP-105 Compressor Power Plant		
C-600-3275	NC-10A/B Mobile Elect. Power Plant		
Operator training courses have not been developed by NAMTRAGRU for the following equipment. Training on this equipment may be obtained from NAESU, Public Works, NAVAVNDEPOTs, or at the intermediate maintenance activity using prepared courses, as appropriate.			
Aircraft Cleaning Machine, AF-3ZM-1		Hydraulic Check and Fill Stand	
Aircraft Crash Crane, NS-60		Hydraulic Power Supply A/M27T-3	
Corrosion Control Spray Unit, A/M32M-18A		Manlift, MZ-40-E	
Eng. Mobile Test Stand LCTC 8000		Mobile Air Conditioner, NR-2B	
Eng. Test Sys., T-58 P/N 21C2222G002, 21C2027G03		Mobile Elect. Power Plant, MMG-2	
Eng. Test Sys., CPWA-0600-10000-041		Oxygen-Nitrogen Generating Plant, GB-1A	
Fluid Purification Sys., AD-A3528Y10		Tenant Hangar Deck Sweeper	
Gas Turbine Starter Test Sys., A/E37T-20/20A		Tow Tractor JG-75	
Helicopter Component Hoist, CH-53		Turbojet/Fan Eng. Test Facility A/F32T-9	
Helicopter Eng. Hoist, CH-53		Turbojet/Fan Eng. Test Facility A/F32T-10	
Hoist/Loading Unit, HLU-196 B/E		Turbojet/Fan Eng. Test Facility A/F32T-11	
Note			
Operation of like support equipment installed in naval aircraft which does not require support equipment licensing shall be operated in accordance with aircraft publications.			

Figure 8-1-5. List of Equipment Which Requires a Support Equipment Operator's License

8.1.18.6 Tool Control Program

8.1.18.6.1 This program, issued by OPNAVINST 4790.2H (NOTAL), provides a means to rapidly account for all tools after completing a maintenance task, thus reducing the potential for foreign object damage. A secondary benefit is reduced tool loss, which reduces tool replacement cost. The weapons officer or delegate coordinates the Ordnance Tool Control Program.

8.1.18.6.2 Tool Containers. The exterior of all tool boxes, kits, and rollaways used for maintenance will clearly identify the organization, work center, and tool container number. The tools contained therein shall be etched with the organization code, work center code, and the container number. Special accountability procedures shall be established locally for those tools not suitable for etching, for example, jewelers' screwdrivers.

NOTE

Do not etch nonsparking, nonmagnetic beryllium hand tools. The etching process of beryllium hand tools generates a fine dust of beryllium, a known health hazard to personnel.

8.1.18.6.3 The position of each tool in the silhouetted container will be against a contrasting background. The silhouetted tool outline will highlight each tool location within the container. Those containers not silhouetted will contain a diagram of the tool locations. Additionally, they shall include a separate listing of tools in calibration or requiring replacement.

8.1.18.7 Visual Information Display System. The Visual Information Display System (VIDS) is a management tool established by OPNAVINST 4790.2H (NOTAL). VIDS presents a means of displaying the status of AWSE undergoing maintenance within a production work area and facilitates the assessment of resources available for the effective and efficient performance of required work. The Maintenance Action Form (MAF) documents on-equipment maintenance and removal/over processing of repairable items. OPNAVINST 4790.2H discusses VIDS equipment and procedures in greater detail. Those activities using NALCOMIS should refer to that system's users manual.

8.1.19 Surveys. A survey is the procedure required when Navy property or Defense Logistics Agency material, including IMRL equipment and AWSE, in Navy custody is lost, damaged, or destroyed. The purpose of the survey is to determine responsibility and fix the actual

loss to the government. To make a true determination, the facts surrounding the loss or damage must be thoroughly investigated and reported in a timely manner. It should not be limited to verifying statements of interested parties, but should be broad enough to ensure that the interests of the government as well as the rights of the individual(s) or activities concerned are fully protected. Review is required to prove or disapprove statements and to place responsibility where it belongs. Survey procedures shall be instituted when an accountable item of AWSE meets one or more of the following conditions.

a. Beyond economical repair which resulted from damage, obsolescence, or deterioration.

b. Acknowledged as nonexistent as a result of loss or theft.

8.1.19.1 Survey Procedures. The survey documents for administrative review the condition of accountable AWSE, the cause of the condition, the responsibility therefore, and a recommendation for disposition. AWSE shall be surveyed in accordance with procedures prescribed in NAVSUP Manual, volume II (NOTAL) and NAVSUP Publication 485 (NOTAL).

8.1.19.2 Reports. The survey shall be initiated and accomplished using Report of Survey (DD 200) and Survey Request, Report, and Expenditure (NAVSUP 154). Type equipment code and serial number of the AWSE shall be included on the forms. Upon approval of the NAVSUP 154, the Aviation Maintenance and Material Readiness List program Support Equipment Transaction Report (OPNAV 4790/64) and an inventory loss VIDS/MAF (OPNAV 4790/60) shall be submitted on all IMRL reportable items showing the loss of the item(s) from the activity's inventory.

8.1.20 Component Repair Program. OPNAVINST 4790.2H (NOTAL) establishes the Component Repair Program to improve readiness of all repairable aeronautical material, including AWSE, with the least expenditure of material, manpower, and money. The program's scope is virtually unlimited and ranges in depth from small adjustments to the complete repair of components and end items. Specifically, the program encompasses those functions performed by the organizational, intermediate, and depot level maintenance activities during overhaul, repair, check, test, certification, modification, or manufacture. These functions are applicable to all AWSE except expendable or consumable items. AWSE shall be repaired at that level of maintenance which will ensure optimum economic use of resources, consistent with assigned availability and readiness standards.

8.1.20.1 Organizational Level Maintenance Functions. Organizational level maintenance activities are responsible for on-equipment repair of AWSE. Specifically, these functions include:

- a. Routine servicing; daily, preoperation, and post-operation inspections; and daily maintenance in accordance with approved MRCs, MIMs, technical manuals, and local instructions.
- b. Operational check and test.
- c. Minor adjustment, removal and replacement of components (knobs, safety wire, fuses, light bulbs, etc.).
- d. Exterior cleaning and preservation, minor corrosion control, and finish touchup, as required.
- e. Compliance with AWSE technical directives.
- f. Identifying, protecting, and turning in material that requires higher level maintenance.
- g. Preservation categories A, B, and C.

8.1.20.2 Intermediate Level Maintenance Functions. In addition to the tasks assigned to the organizational level, intermediate level maintenance activities are authorized to perform the following functions:

- a. Acceptance, special, and periodic inspections.
- b. Test, fault isolate, adjust, repair, remove, and replace components.
- c. Preservation categories A, B, and C.
- d. Functional test, nondestructive inspection (magnetic, fluorescent, dye-penetrant, ultrasonic, eddy current, optical, and X-ray), calibration, and weight test.
- e. Welding; soldering; fabrication of replacement parts; and flush cleaning, purging, and sampling of hydraulic systems.

8.1.20.3 Depot Level Maintenance Functions. In addition to the tasks assigned to the organizational and intermediate levels, depot level maintenance activities provide rework of AWSE end items and components. Rework is comprised of maintenance and modification functions required to maintain, restore, or improve design level performance, reliability, and material condition. Depot level maintenance activities support the lower levels of maintenance by providing technical assistance and carrying out those functions which are beyond the responsibility or capability of the organizational and intermediate levels through the use of more extensive facilities,

skills, and materials. Specific AWSE maintenance functions include:

- a. Complete rebuild through reclamation, refurbishment, overhaul, repair, replacement, adjustment, servicing, replacement of consumables, inspection, calibration, and testing.
- b. Modification (alteration, conversion, engineering change, modernization, and product improvement).
- c. Preservation categories A, B, and C.
- d. Metal work (pressing).
- e. Heat treating, baking, welding, and soldering (electric, spot, seam, and roll).
- f. Hardness testing, magnetic perturbation, and pressure testing.

8.1.21 AWSE Repair Criteria. In conformance with the Component Repair Program concept, AWSE materials shall be repaired at that level of maintenance which will ensure optimum use of resources while satisfying operational requirements. Repair criteria are established in the following paragraphs.

8.1.21.1 All maintenance activities may repair consumable materials if a replacement item is not available in stock locally, the item is required to offset a Not Mission Capable Supply or Partial Mission Capable Supply, or work stoppage, and such repair is practical and within their capability.

8.1.21.2 All maintenance activities may repair manufactured "M" series material if it is practical, economical, and within their capability. In certain cases, this type of material is forwarded to the next higher maintenance level for repair on a customer service basis. It must be understood that requests for "M" series material are, in most cases, filled by a naval aviation depot, resulting in the expenditure of considerable time and resources. The intermediate maintenance activity can, in many cases, make timely repairs to "M" series material with a minimum expenditure of time and resources.

8.1.21.3 Repairs of extensively damaged components should not normally be made if repair costs for a given component will exceed the replacement cost. When it appears that the repair cost will exceed the replacement cost, the published standard replacement price, or if these costs are unknown, disposition will be as follows:

- a. When components are so severely damaged that, in the judgment of the intermediate maintenance activity,

repair is not feasible, the component should be condemned and surveyed or returned to the designated overhaul point in accordance with the SM&R code.

b. When an intermediate maintenance activity decides that repair is feasible though expensive, the component should be shipped to the designated overhaul point. The exception is when expeditious repair is required for an immediate requirement. In this case the component may be repaired by the intermediate maintenance activity regardless of cost.

c. When a naval aviation depot determines that repair is feasible though expensive, the cognizant inventory control point should be contacted for disposition instructions. Pending receipt of disposition instructions, a different unserviceable component should be called in for repair in place of the one being delayed. If no other components are available, the component in question should be repaired to satisfy the repair requirement submitted by the inventory control point.

8.1.21.4 When components with scheduled maintenance times are repaired by the intermediate maintenance activity, the intermediate maintenance activity shall not zero time the component unless specifically authorized to do so. The component should have enough time remaining after repair to complete a full phase or calendar inspection interval prior to forced removal. It is realized that the component may be installed on an aircraft of a different calendar cycle than that from which it was removed, however, certain latitude is granted to operating units to extend maximum operating time. In certain cases, overhaul or repair of components with operating assigned time that do not have enough time to complete a phase or calendar interval is authorized, for example, when a ready-for-issue replacement is not available. The intermediate maintenance activity will also repair this type of material when required for reinstallation on a transient aircraft, and the logbooks are not available to verify operating times. Data concerning the repair is provided to the flight crew for applicable logbook entries upon return to home station.

8.1.21.5 Assembled A-series components are normally not procured and stocked. Intermediate maintenance activities shall ensure these components are repaired. Requirements to repair this type of material shall be forwarded to the intermediate maintenance activity or depot via supply system requisitions.

8.1.21.6 A microcircuit module is defined as "an assembly of microcircuits, or microcircuits and discrete conventional electronic equipment, constructed as an independently packaged replaceable unit." Responsibility

for intermediate level activities to repair microcircuit modules is established by the combination of COMNAV-AIRSYSCOM-assigned intermediate level SM&R codes and SECA or TYCOM certification of individual intermediate maintenance activities. Miniature/Microminiature (2M) repair capability. In some cases, certain intermediate level activities may perform depot level repairs on designated components as approved by COMNAV-AIRSYSCOM upon recommendation of the SECA or TYCOM.

a. Repairs will be accomplished only by activities which have been certified as 2M repair capable by the cognizant SECA or TYCOM. Certification is written testimony that the activity has qualified 2M repair technicians assigned, and operable 2M repair equipment available.

b. Refer to OPNAVINST 4790.2H (Naval Aviation Maintenance Program), chapter 11 (NOTAL), for certification procedures for 2M module repair technicians.

8.1.22 Repair Capability Improvement. Optimum expenditure of resources and effective maintenance of AWSE may be precluded by a variety of factors. The most prevalent obstacles are generally classified as inadequacies in the quantity and/or quality of:

- a. Personnel.
- b. Skills.
- c. Equipment or tools.
- d. Facilities.
- e. Technical data.
- f. Parts.

8.1.22.1 The predominant cause of the lack of resources to accomplish planned repair capability at the intermediate level is that the component or equipment was provisioned for prior to the emergence of the Component Repair Process as we know it today. Additional causes for this lack of resources are failure to provision under established maintenance policy, nonavailability of procurement funds after provisioning, failure of maintenance managers to identify, plan for, and request required resources, lack of intermediate level maintenance representation at provisioning conferences, and failure to identify and assign the resources required for this function. All echelons of maintenance and command must ensure that deficiencies that have an adverse effect on maintenance are identified and that upline managers are notified of the deficiencies.

8.1.22.2 To assist in determining deficiencies or reasons for lack of maintenance capability, each intermedi-

ate maintenance activity shall establish BCM review procedures. The objective of this review is to ensure BCM codes are properly assigned and to determine those areas where the range and depth of intermediate I-level repair capability can be improved, either through corrective action for deficiencies preventing the accomplishment of repair or by the establishment of additional repair capability. This encompasses monthly reviews of the Individual Component Repair List for induction or repair limiters.

8.1.22.3 After the BCM action review, the activity may determine that the deficiency can be corrected locally or that it may not be economically practical to obtain the additional capability. If an increase in, or establishment of, a repair capability is desired and justifiable, submit a letter requesting increased capability to COMNAVAIR-SYSCOM via the SECA or TYCOM. The request shall include the following, to the shop replaceable assembly level:

- a. Specific capability being requested. Include extent of improved capability, for example, limited repair, complete repair, or overhaul.
- b. Identify the specific items which require the capability requested by part number and manufacturer's code.
- c. System or aircraft which uses the item and number of systems supported. Include projected number of units to be processed per month.
- d. Justification. The number of items presently in BCM status, most common repair action, parts to be replaced (if known), anticipated improvements in turnaround time, projected increases in system or aircraft readiness, and any additional items which could be repaired using the improved capability.
- e. Equipment or facilities required and what is now on-hand or available locally.
- f. Personnel impact, such as reallocations or increases.
- g. Training required, such as special courses.
- h. Publications required.

8.1.22.4 The SECA or TYCOM's role in the process of improving repair capability is to confirm the activity's input and furnish information that would support or negate the request. Upon receipt of a request, the SECA or TYCOM shall:

- a. Amplify the benefits in terms of reduced costs for shipping and repair, reduction in turnaround time, increased readiness, etc.
- b. Justify requests by the analysis of 3M data.
- c. Verify equipment, facilities, personnel, training, and calibration requirements.
- d. Estimate total cost of providing improved capability and identify any additional funding requirements.
- e. Identify any workload reduction in other areas caused by establishing improved capability.
- f. Recommend maintenance plan and SM&R code changes to the shop replaceable assembly level.
- g. Determine the benefit of expansion of improved repair capability to other similar sites.
- h. If approved, ensure an implementation plan of actions and milestones is initiated.

8.1.22.5 Upon receipt of a request for increased capability and the SECA or TYCOM's forwarding endorsement, COMNAVAIRSYSCOM shall:

- a. Review the request and endorsement.
- b. Determine the need for and frequency of a quality audit, and arrange for it to be done.
- c. Approve or disapprove the request and provide justification.
- d. If approved, designate the specific activity to receive the increased capability and specific capability authorized.

8.1.22.6 Activities may request deletion of assigned responsibilities from the SECA or TYCOM. Full justification should accompany all requests. The SECA or TYCOM shall review all requests to determine if the conditions which restrict repair can be overcome.

8.1.22.7 The correction of deficiencies is a continuing problem with new equipment currently in service. Various policies are being implemented to ensure that intermediate maintenance requirements are documented and provisioning is done for new equipment. Some of these policies are listed in the following subparagraphs:

- a. Providing for intermediate maintenance activity representation during provisioning.
- b. Documenting all elements of data required for provisioning.

8.1.23 Personnel Qualification and Certification Requirements. Personnel involved with the maintenance of AWSE whose duties involve handling explosive ordnance must be trained, qualified, and certified to perform these actions in accordance with the requirements of OPNAVINST 8020.14/MCO P8020.11 (NOTAL) or MCO 8023.3 (NOTAL) and applicable type commander instructions.

8.1.24 Maintenance Training Requirements. Maintenance training is a continuous and ongoing process. Formal classroom training is enhanced by practical application of learned skills in a structured environment through the Fleet Readiness Aviation Maintenance Per-

sonnel training program. Naval Air Maintenance Training Group Detachments and Aviation Weapons Training Units provide Navy-sanctioned courses for specialized instruction in airborne weapons and AWSE maintenance. On-the-job training is conducted by the respective squadrons, Navy and Marine Corps air stations, aircraft carriers, and reserve force activities which operate and use AWSE. Intermediate level maintenance on-the-job training is augmented through the use of Engineering Technical Specialists/Fleet Weapons Support Team provided by the Naval Air Warfare Center Weapons Division. Chapter 10.4 provides procedures for requesting field service training and technical assistance.

CHAPTER 8.2

Organizational Level Maintenance

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CHAPTER 8.2

Organizational Level Maintenance

8.2.1 General. Organizational level maintenance directly supports and maintains the aircraft weapon system which consists of the aircraft; airborne weapons, ordnance, and ammunition; associated aircraft armament equipment; and Armament Weapons Support Equipment (AWSE). This chapter discusses the maintenance functions which are authorized and designated to be performed by organizational (using activity) personnel. Assignment of individual maintenance functions to a maintenance level allows maintenance activities to further plan and conduct the specific tasks they are required to perform. To determine the extent to which a repair action can be undertaken, the maintenance activity shall consult the appropriate maintenance instruction manuals (MIM), operating and service instructions, or technical directives that apply to each supported weapon system, component, or AWSE item. AWSE is allocated to organizational level maintenance activities by NAVAIRSYS-COM as described in chapter 8.1. of this volume. Volume I chapter 2.2 describes organizational level maintenance functions, chapter 2.3 assigns responsibilities that apply to AWSE, and volume II chapter 8.1 provides guidance for performance of assigned tasks.

8.2.2 Organizational Level Maintenance Concept.

Organizational level maintenance activities perform scheduled (preventive) and unscheduled (corrective) maintenance actions necessary to maintain or restore AWSE to inherent design levels of performance, reliability, and material condition in performance of the unit's operations on a day-to-day basis. When beyond the capability of the custodian, maintenance will be accomplished by the designated department or activity (intermediate or depot) most capable of accomplishing the specific maintenance actions, operational conditions permitting.

8.2.3 Organizational Level Maintenance Actions.

Organizational level maintenance activities are authorized to perform all those repair, replacement, modification, and overhaul actions which are prescribed in the applicable equipment maintenance plans, technical manuals, and technical directives approved and issued by NAVAIRSYSCOM. Intermediate level actions include limited calibration, and test and inspection functions nec-

essary for fault isolation (troubleshooting) and repair verification, as appropriate. Scheduled (preventive) and unscheduled (corrective) maintenance actions are defined as follows:

a. **Scheduled Maintenance.** Scheduled maintenance is periodic inspection and/or servicing of equipment prescribed to be accomplished on a calendar, mileage, hours of operation, or other quantifiable basis. Its objective is to maintain AWSE in satisfactory operating condition by providing for systematic inspection, detection, and correction of incipient failures either before they occur or before they develop into major defects. Scheduled maintenance is performed using Maintenance Requirement Cards (MRC) which are generated from the applicable MIM to facilitate a planned maintenance system for each AWSE item. MRCs identify the maintenance tasks required to maintain an equipment in an effective operating condition and are arranged sequentially by work area and system. Reporting custodians may increase the depth and frequency of any scheduled inspection, require additional inspections whenever excessive time has elapsed between inspections or when environmental or operational conditions are considered to have impaired the material reliability or integrity of the equipment. Inspections performed to a greater depth or at an increased frequency are logged, if required, as the type which would normally be performed and do not alter the schedule of the programmed inspections or servicing requirements.

NOTE

MRCs are optional for use by commercial or civil service staffed maintenance activities.

b. **Unscheduled Maintenance.** Unscheduled maintenance is corrective maintenance performed, as a result of failure, to restore a repairable item to a specified condition. It includes conditional inspections, fault isolation (troubleshooting), repair or replacement of components, adjustment, lubrication, test, calibration (if required), and preparation for shipment or storage.

c. **Support equipment (SE), aviation weapons support equipment (AWSE), and weight handling equipment (WHE)**

preservation is designed to protect the material condition of equipment which is not expected to be used for extended periods of time. This equipment may be preserved at any time, regardless of material condition, when it is determined to be in the best interest of the equipment or activity. The AMO/weapons officer is responsible for determining when this equipment is required to be placed in preservation. For equipment placed in preservation per applicable MIMs or directives, all PMS inspections may be deferred until the equipment is removed from preservation. Equipment not placed in preservation shall receive corrosion prevention/treatment per applicable MIMs/MRCs. For standardized management of personnel and resources, activities may use the following categories to determine the level of preservation desired

1. Category A - SE/AWSE/WHE which has anticipated usage within the next 90 days. This equipment shall be maintained under current SE/PMS directives.

2. Category B - SE/AWSE/WHE which could possibly be used within the next 180 days. This equipment may be placed in a minimum of level I.

3. Category C - SE/AWSE/WHE not needed for extremely long periods of time (in excess of 180 days) may be placed in level II or III preservation depending on the resources at the geographical area.

- d. Levels of preservation SE/AWSE/WHE are defined below. Dehumidification (level III) is preferred method of

preservation.

1. Level I: 0 - 90 days (plus or Minus 3 days).
2. Level II: 0 - 1 year.
3. Level III: 0 - indefinite.

- e. Work performed on preserved SE/AWSE/WHE shall be directed by maintenance control, ordnance production control, monitored by work center supervisors and personnel assigned quality assurance responsibilities. Depreservation, maintenance, and the represervation of specific area where maintenance was performed shall be annotated in the corrective action block of the original discrepancy MAF. The QAR/CDI in-process inspection shall ensure all preservation requirements are met after maintenance is performed. No additional depreservation/represervation MAF or logbook entry is required.

- f. Type Wings, Marine Aircraft Wings (MAWS), or equivalent may waive or modify preservation requirements for aeronautical equipment undergoing extensive repairs or modification when the preservation would adversely affect the completion of the task.

8.2.4 Coordination and Administration. The using activity's maintenance control officer shall ensure that AWSE is serviced, inspected, and maintained in accordance with prescribed requirements, and returned to the intermediate maintenance activity for both scheduled and unscheduled intermediate level maintenance.

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CHAPTER 8.3

Intermediate Level Maintenance

8.3.1 General. Intermediate level maintenance enhances and sustains the combat readiness and mission capabilities of supported activities by providing quality and timely material support at the closest location with the lowest practical expenditure of resources. This chapter discusses the Armament Weapons Support Equipment (AWSE) functions which are authorized and designated to be performed by a naval air station, Marine aircraft group, Marine aviation logistics squadron, or shipboard weapons department personnel. An intermediate level maintenance activity comprises all departmental units responsible for providing support, afloat and ashore, to organizational units. Typically, an intermediate level maintenance activity consists of the aircraft intermediate maintenance department (AIMD), supply department, weapons department, and engineering department. As an integral part of that activity, the AIMD is responsible for performing maintenance on the aeronautical equipment located at the ship or station supported. Intermediate level maintenance actions for AWSE are associated with operation and repair, including scheduled (preventive) and unscheduled (corrective) maintenance, time-phased and event-phased inspections, cleaning, minor corrosion control, and servicing. Assignment of individual maintenance functions to a maintenance level allows maintenance activities to further plan and conduct the specific tasks they are required to perform. To determine the extent to which a repair action can be undertaken, the maintenance activity shall consult the appropriate maintenance instruction manuals (MIM), operating and service instructions, or technical directives that apply to each supported weapon system, component, or AWSE item. AWSE is allocated to intermediate level maintenance establishments by COMNAVAIRSYSCOM as described in chapter 8.1 of this volume. Volume I chapter 2.2 defines intermediate level maintenance functions and chapter 2.3 assigns responsibilities that apply to AWSE.

8.3.2 Intermediate Level Maintenance Concept. Intermediate level maintenance activities perform scheduled (preventive) and unscheduled (corrective)

maintenance actions which are beyond the scope and capability of organizational level maintenance and are necessary to maintain or restore AWSE to inherent design levels of performance, reliability, and material condition. Intermediate level maintenance activities are staffed by trained personnel and equipped with specialized tools, test sets/stations, and support equipment for support equipment.

8.3.3 Intermediate Level Maintenance Actions.

In addition to the actions authorized at the organizational level, intermediate level maintenance activities are authorized to perform all those repair, replacement, modification, and overhaul actions which are prescribed in the applicable equipment maintenance plans, technical manuals, and technical directives approved and issued by COMNAVAIRSYSCOM. Intermediate level actions include limited calibration, and test and inspection functions necessary for fault isolation (troubleshooting) and repair verification, as appropriate. Scheduled (preventive) and unscheduled (corrective) maintenance actions are defined as follows:

a. **Scheduled Maintenance.** Scheduled maintenance is periodic inspection and/or servicing of equipment prescribed to be accomplished on a calendar, mileage, hours of operation, or other quantifiable basis. Its objective is to maintain AWSE in satisfactory operating condition by providing for systematic inspection, detection, and correction of incipient failures either before they occur or before they develop into major defects. Scheduled maintenance is performed using Maintenance Requirement Cards (MRC) which are generated from the applicable MIM to facilitate a planned maintenance system for each AWSE item. MRCs identify the maintenance tasks required to maintain an equipment in an effective operating condition and are arranged sequentially by work area and system. Reporting custodians may increase the depth and frequency of any scheduled inspection, require additional inspections whenever excessive time has elapsed between inspections or when environmental or operational conditions are considered to have impaired the material reliability or integrity of the equipment. Inspections performed to a greater depth or at an increased frequency

are logged, if required, as the type which would normally be performed and do not alter the schedule of the programmed inspections or servicing requirements.

b. **Unscheduled Maintenance.** Unscheduled maintenance is corrective maintenance performed, as a result of failure, to restore a repairable item to a specified condition. It includes conditional inspections, fault isolation (troubleshooting), repair or replacement of components, adjustment, lubrication, test, calibration (if required), and preparation for shipment or storage.

c. **Support equipment (SE), aviation weapons support equipment (AWSE), and weight handling equipment (WHE)** preservation is designed to protect the material condition of equipment which is not expected to be used for extended periods of time. This equipment may be preserved at any time, regardless of material condition, when it is determined to be in the best interest of the equipment or activity. The AMO/weapons officer is responsible for determining when this equipment is required to be placed in preservation. For equipment placed in preservation per applicable MIMs or directives, all PMS inspections may be deferred until the equipment is removed from preservation. Equipment not placed in preservation shall receive corrosion prevention/treatment per applicable MIMs/MRCs. For standardized management of personnel and resources, activities may use the following categories to determine the level of preservation desired

1. **Category A** - SE/AWSE/WHE which has anticipated usage within the next 90 days. This equipment shall be maintained under current SE/PMS directives.

2. **Category B** - SE/AWSE/WHE which could possibly be used within the next 180 days. This equipment may be placed in a minimum of level I.

3. **Category C** - SE/AWSE/WHE not needed for extremely long periods of time (in excess of 180 days) may be placed in level II or III preservation depending on the resources at the geographical area.

d. Levels of preservation SE/AWSE/WHE are defined below. Dehumidification (level III) is preferred method of preservation.

1. Level I: 0 - 90 days (plus or Minus 3 days).
2. Level II: 0 - 1 year.
3. Level III: 0 - indefinite.

e. Work performed on preserved SE/AWSE/WHE shall be directed by maintenance control, ordnance pro-

duction control, monitored by work center supervisors and personnel assigned quality assurance responsibilities. Depreservation, maintenance, and the represervation of specific area where maintenance was performed shall be annotated in the corrective action block of the original discrepancy MAF. The QAR/CDI in-process inspection shall ensure all preservation requirements are met after maintenance is performed. No additional depreservation/represervation MAF or logbook entry is required

f. **Type Wings, Marine Aircraft Wings (MAWS),** or equivalent may waive or modify preservation requirements for aeronautical equipment undergoing extensive repairs or modification when the preservation would adversely affect the completion of the task.

8.3.4 Armament Handling Equipment and Weapons Handling Equipment. The numbers of different aircraft, multiple configurations, and unique requirements preclude listing all the applicable authorized handling equipment used at intermediate level maintenance in this instruction. However, the following reference manuals provide a listing of specific items of handling equipment along with a description of each item, applications and uses of the equipments, and any associated items. In addition, the manuals list the command cognizance for each handling equipment item, the in-service engineering agent, and applicable authorized technical manuals for each individual item:

a. NAVAIR 11-120A-1.1 (Volume 1), Airborne Weapons Packaging/Handling/Stowage (Shipboard) (NOTAL).

b. NAVAIR 11-120A-1.2 (Volume 2), Airborne Weapons Packaging/Handling/Stowage (Shipboard) (NOTAL).

c. NAVAIR 11-140-24, Airborne Weapons Support Equipment (NOTAL).

d. NAVAIR 11-140-25, Armament Handling Equipment Configuration Manual, All Aircraft.

e. NAVAIR 19-100-1.1 (Volume 1), Approved Handling Equipment for Weapons and Explosives (Adapters Through Jigs) (NOTAL).

f. NAVAIR 19-100-3, Armament Weapons Support Equipment Miscellaneous Adapters, Intermediate Level Maintenance with Illustrated Parts Breakdown (NOTAL).

8.3.5 Armament Systems Test Equipment and Weapons Test Equipment. Test equipment used at

intermediate level maintenance activities is specified in the applicable technical manual for the respective type of unit under test.

8.3.6 Record Keeping and Reporting. In addition to conforming to local command reporting requirements, intermediate level maintenance activities shall record maintenance actions and comply with tracking transaction reporting requirements prescribed in chapter 8.1 when AWSE items are transferred. They are also responsible for originating and/or maintaining the AWSE documentation listed below. All records must accompany the AWSE item when transferred to an organizational or depot level maintenance activity, and the transaction document shall be forwarded to the data services facility.

a. Work Request Customer Service (OPNAV 4790/36A). This form is used to request work or assistance from a depot overhaul point that is beyond the requesting activity's maintenance capability. Intermediate level maintenance activities use this form to request assistance from depot level activities to complete components delayed in process due to lack of facilities for check and test, or for processing not normally required, such as heat treatment, plating, magnaflux, and machine shop. Appendix H, page H-26, depicts an example of the work request customer service form.

b. Support Equipment Depot Rework Schedule Request (OPNAV 4790/80). This form is used to request scheduling of end items of support equipment that are beyond the requesting intermediate level activity's maintenance capability.

c. Metrology Equipment Recall and Report Card (Green Copy). That portion of the maintenance organization's workload devoted to the calibration and repair of test and measuring systems is documented on the metrology equipment recall and report card. This form facilitates the interface of the MEASURE and Aviation Maintenance and Material Management Systems. This data is required for the immediate management needs of the calibration activity. The form prescribed herein for recording data meets these requirements. The Aviation Maintenance and Material Management System (3M) data records produced from the metrology equipment recall and report card are the same as those from the VIDS/MAF data records. This form provides for recording, among others, the following types of data:

- (1) A job control number.

- (2) The identity of the workcenter, support and supported organizations in which the maintenance action is performed.

- (3) How the malfunction or discrepancy failure occurred, when it was discovered, and action taken to correct it.

- (4) The signatures of individuals performing, inspecting, and supervising the maintenance.

8.3.6.1 Technical Directives. Intermediate level maintenance personnel are responsible for assuring that support equipment changes and support equipment bulletins for AWSE directed to that level are complied with. Technical directive compliance is documented using the technical directive compliance VIDS/MAF. Maintenance control schedules all technical directive compliance actions and initiates all technical directive compliance VIDS/MAFs. If the technical directive action is beyond the capability of intermediate level maintenance, the AWSE item must be sent to depot level maintenance.

8.3.7 Interface Requirements. To satisfactorily perform its functions, the intermediate maintenance activity must have close liaison with supported organizational units and depot level activities, as well.

8.3.7.1 Organizational Level Maintenance Interface. Liaison shall ensure current and accurate requirements related to:

- a. Deployment schedules (for projecting temporary additional duty). This should be part of the monthly maintenance plan.

- b. AWSE scheduled maintenance inductions (for scheduling purposes).

- c. Organizational level support equipment training and licensing.

- d. No defects (Action Taken, Code A, on the VIDS/MAF) for maintenance actions from the organizational level unit to facilitate efficient, effective, and timely troubleshooting.

8.3.7.2 Depot Level Maintenance Interface. Liaison shall ensure adequate understanding of local customer service procedures. As used in this instruction, customer service is the provision of depot level services, including emergency check, test, minor repair, manufacture of parts, heat treatment, plating, machine shop services, or other efforts as directed by the COMNAVAIRSYSCOM in the processing of material to relieve Not Mission Capa-

ble Supply (NMCS), Partial Mission Capable Supply (PMCS), and work stoppage conditions. Support equipment requiring extensive repairs or overhaul, including items causing NMCS, PMCS, or work stoppage conditions normally will not be processed by customer service. However, when situations warrant, NAMO, in coordination with the cognizant functional wing, may authorize customer service for specified items to relieve NMCS, PMCS, or work stoppage conditions. Refer to chapter 8.4 for further details.

8.3.8 Inter-Intermediate Maintenance Activity Support. Instances will occur where a repairable component, which is beyond the capability of the local maintenance activity, is shipped to an off-station intermediate maintenance activity for repair and return. Procedures for such actions are described below.

NOTE

This is an inter-intermediate maintenance activity action for both on-station and off-station for Marine Corps activities.

8.3.8.1 Processing Defective Components for Shipment to an Off-station Intermediate Maintenance Activity for Repair and Return.

a. Supply shall receive the defective component in accordance with local supply procedures.

b. Supply shall deliver the defective component, new VIDS/MAF Copies 1 through 5, original VIDS/MAF Copy 4, and records to the Aeronautical Material Screening Unit.

NOTE

Components shipped as ready-for-issue but without a ready-for-issue tag will be inducted into AIMD on a VIDS/MAF for check and test. The component control section will prepare the VIDS/MAF work request using a supply job control number.

c. The component control section shall process the VIDS/MAF Copy 2 in accordance with the condition block (Ready-for-Issue or Beyond Capability of Maintenance) checked on the VIDS/MAF Copy 2 to the data services facility.

d. Supply shall ship the component, new VIDS/MAF Copy 4, records, and DD Form 1348-1 in accordance with local supply procedures.

e. Those activities using the Naval Aviation Logistics Command Management Information System (NALCOMIS), refer to the system user's manual for specific data requirements for processing defective components off-station.

8.3.8.2 Processing Components Returned from an Off-station Intermediate Maintenance Activity as a Result of a Previous Local Beyond Capability of Maintenance Action.

a. Supply shall receive the component, VIDS/MAF Copy 4, records, and DD 1348-1 in accordance with local supply procedures.

b. Supply shall deliver the ready-for-issue component and records to the customer. Not ready-for-issue components received shall be processed in accordance with local procedures.

c. Those activities using the NALCOMIS, refer to the system user's manual for specific data requirements for processing off-station repaired components.

8.3.9 Shop-Installed Support Equipment Maintenance. The procedures delineated below will be followed by production control on the planning, scheduling, performance, and recording of support equipment maintenance.

a. Originate separate folders by equipment serial number to file historical information of support equipment. Folders are to be divided into sections for scheduled and unscheduled maintenance.

b. Originate and maintain a support equipment custody and maintenance history record (OPNAV 4790/51) on all assigned support equipment as required.

c. List all support equipment inspections and technical directives due in the monthly maintenance plan.

d. Issue VIDS/MAF to the appropriate work centers for all scheduled maintenance and technical directive compliance.

8.3.10 Repairables Management. All components inducted by the intermediate maintenance activity shall be processed in accordance with the following procedures. Those activities using the NALCOMIS, refer to the system users manual for documentation

and component processing details and procedures. In no case shall not ready-for-issue material be casually or carelessly handled merely because it is intended to undergo repair. Particular care shall be given to prevent further damage of repairable items that are to be returned to the depot for overhaul.

8.3.10.1 Control of Components Processed by the Intermediate Maintenance Activity. When work on components in the intermediate maintenance activity must be delayed due to an awaiting parts status, the component is turned in to the awaiting parts unit of the component control section. When work on components has been completed, return the component to material control for processing. Material control shall:

- a. Receive the component and documentation from the workcenter. Ensure that VIDS/MAF copies 1 and 4 indicate the action taken.
- b. Notify the SSC that the component is ready for pickup.
- c. Obtain SSC signature of receipt on VIDS/MAF copy 1.
- d. Turn in the component, VIDS/MAF copy 4, logs, records, and condition tag to the SSC.
- e. Forward VIDS/MAF copy 1 to quality assurance via production control.

8.3.10.2 Preservation, Packaging, and Handling. The intermediate level maintenance activity is responsible for internal and external preservation (prior to packing) of all components. Components shall be adequately protected for local routing to the supply department packing and preservation section. All aeronautical material, regardless of its status, (ready-for-issue or not ready-for-issue), shall be preserved, packaged, and handled by supply and maintenance personnel in such a manner as to prevent damage or deterioration. When it is positively known that a component repaired by an intermediate maintenance activity will be reissued to local operating units in a reasonably short time, it need only receive the minimum amount of preservation and packaging to ensure positive identification and short-time protection of the item.

NOTE

All printed circuit assemblies or micro components will be considered to be electrostatic discharge sensitive while being handled, packaged, repaired, and transported. Guidance and direction for the identification, handling, and protection of electrostatic discharge-sensitive components shall be in accordance with NAVSUPINST 4030.46 (NOTAL). NAVSUP P484 details the proper methods and materials used in packaging electrostatic discharge-sensitive components.

Additionally, supply assets shall be tracked to ensure reinspection or preservation is performed per applicable preservation and technical manuals.

NOTE

Any material to be released to an authorized contractor's representative or shipped directly to a contractor's plant shall be processed through the supply department. The supply department may issue the material on a custody basis only after receiving the authority to do so from the cognizant field activity.

8.3.10.3 Handling and Preservation of Engineering Investigation (EI) or Quality Deficiency Report (QDR) Material. Originating intermediate maintenance activities shall turn in defective material to supply for holding and shipment. The intermediate maintenance activity shall handle and prepare EI or QDR material as follows:

- a. Maintain an "as is" condition.
- b. Take special care to cap and package material immediately upon removal from the system to prevent corrosion, contamination, or other damage that may contribute to confusion or loss of possible cause factors. Do not attempt any adjustments, disassembly, or perform any type of cleaning. If any adjustment, disassembly, or cleaning was done during a local investigation, a list of particulars describing the local investigation must accompany the material to the cognizant field activity.
- c. Forward samples of fluid in clean, sealed, authorized containers. If contamination is suspected, annotate sample bottles accordingly.
- d. Do not attempt to reassemble fragments of failed material. Wrap each fragment separately to prevent dam-

age caused by movement of one fragment against another. When feasible, forward associated accessories, components, or material suspected of contributing to the malfunction or mishap.

e. Attach the VIDS/MAF, EI request or QDR, and any other applicable records and documentation to the equipment being shipped. Material control shall ensure the VIDS/MAF is marked "EI" or "QDR" with 3-inch red letters as not to obscure vital data elements.

8.3.11 Individual Component Repair List

8.3.11.1 The Individual Component Repair List (ICRL) is a management tool that provides an intermediate maintenance activity with the ability to relate maintenance capability to individual items. NAVAMMOLOGCEN Philadelphia, PA. maintains the master data base and publishes the ICRL.

8.3.11.2 The master ICRL data file is established at NAVAMMOLOGCEN Philadelphia, PA.. The purpose of a central ICRL data repository is to produce an ICRL for each selected intermediate maintenance activity. Capability data in the ICRL is based on intermediate maintenance activity input. The ICRL contains existing repair capability data on items processed by the intermediate maintenance activity based on past experience. The ICRL will also contain target capability data based on Source, Maintenance, and Recoverability Codes. The ICRL also identifies fixed price allowance items that are capable of local repair, targeted for future repair, or for which repair is not planned. NAVAMMOLOGCEN Philadelphia, PA., controlling custodians, and individual intermediate maintenance activities shall use the ICRL as a factor in the negotiation process for determination of site operational support inventory or fixed allowance quantities and allowance change request authorizations. Access to the ICRL data file is available to users of the teletypewriter communication network. Correction and update of ICRL data is dependent on intermediate maintenance activity and NAVAMMOLOGCEN Philadelphia, PA. inputs.

8.3.11.3 Policy. The following policies apply to the maintenance, management, and use of the ICRL.

a. Intermediate maintenance activity component repair capability data shall reside in a central data base at NAVICP Philadelphia, PA..

b. ICRL documents and associated reports shall be published and distributed to each intermediate maintenance activity, controlling custodian, and headquarters level command.

c. Direct liaison and contact for reporting reconciliation purpose shall be conducted between NAVAMMOLOGCEN Philadelphia, PA. and intermediate maintenance activities.

d. NAVAMMOLOGCEN Philadelphia, PA. shall provide special ICRL products at the request of controlling custodians, COMNAVAIRSYSCOM, the Naval Supply Systems Command, Naval Aviation Maintenance Office, and intermediate maintenance activities.

e. The Standard ICRL Program is in consonance with existing maintenance and material management policies promulgated by NAVSUPINST 4440.160A (NOTAL).

f. Intermediate maintenance activity supply managers shall consult with their maintenance counterparts regarding ICRL management and shall actively support and participate in local efforts to improve repair capability.

g. PME may be added to individual ICRLs at the respective intermediate maintenance activity's discretion or as directed by the controlling custodian or type commander.

h. Repairable support equipment components, as well as locally repairable components, shall be included on each activity's ICRL.

i. Individual intermediate maintenance activities submit ICRL additions, deletions, and changes to NAVICP Philadelphia, PA..

8.3.11.4 ICRL General Use Procedures. It is the workcenter supervisor's responsibility to ensure that the intermediate maintenance activity's ICRL shows the most current status of the workcenter's repair capability. To do that, each workcenter verifies their part of the ICRL quarterly. The supply department's master stock item records shall reflect local repair capability data. The supply department shall use the local ICRL as a source of data when recomputing repairables allowances. Supply shall maintain progress records on attainment of local repair capability for designated intermediate level fixed allowance items.

8.3.11.4.1 ICRL Updating Procedures. If a component is inducted into a workcenter with an ICRL card (NAVSUP 1364), the workcenter supervisor shall annotate the appropriate blocks and forward the card to the maintenance officer or his or her representative.

8.3.11.4.2 AIMD shall publish a maintenance instruction amplifying ICRL maintenance and use. That shall be a combined AIMD, weapons department, and supply effort. AIMD and supply shall each designate an ICRL manager, who is responsible for ICRL distribution, update, training, audit, and coordination. The weapons department is responsible for ensuring and verifying that WSE in its subcustody, which is repairable under applicable Source, Maintenance, and Recoverability codes, is included on the AIMD ICRL.

8.3.11.4.3 The ICRL audit shall consist of the following steps:

a. Select items from current production reports to verify that ICRL transactions are being done and recorded.

b. Review selected work requests for ICRL application documentation.

c. Spot check Individual Material Readiness List support equipment components for inclusion on the ICRL.

d. Validate ICRL reports and files for accuracy and completeness.

e. Check actions being taken to improve repair capability for items shown on the ICRL reports.

8.3.11.4.4 AIMD will ensure that production divisions processing repairables not inducted through a central aeronautical material screening unit, for example, engines, support equipment, and drop tanks, record repair data and originate ICRL input cards.

8.3.11.4.5 Supply (in Marine Corps activities the marine aviation logistics squadron) shall ensure ICRL cards are processed to NAVAMMOLOGCEN Philadelphia, PA. in a timely fashion.

8.3.11.4.6 Those activities using the NALCOMIS, refer to the system user's manual for specific details and procedures to maintain the ICRL.

NOTE

The standard individual component repair list change record (NAVSUP 1364) is available through the supply system.

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CHAPTER 8.4

Depot Level Maintenance

8.4.1 General. Depot level activities perform Armament Weapons Support Equipment (AWSE) maintenance that is beyond the responsibilities or capabilities of organizational and intermediate levels. Depot level maintenance functions are carried out at industrial establishments having more extensive facilities, skills, and materials than fleet and field activities, or at the operational site(s) by field teams dispatched by the depot(s) if circumstances warrant. Depot level maintenance establishments may be government-owned and operated (organic), government-owned and contractor operated, or contractor-owned and operated. Establishments having limited depot capabilities are designated as all-up-round (AUR) Depots are Weapons Station (WPNSTA) Detachment Yorktown, VA.; Weapons Station (WPNSTA) Seal Beach Detachment Fallbrook, CA and Naval Airborne Weapons Maintenance Unit One (NAWMU-1) NAVSURFWARCENDIV CRANE IN, NAVAIRWARCENWPNDIV PT. MUGU CA, Letterkenny Army Depot, Boeing Aerospace Corp., and Texas Instruments. Depot level AWSE is primarily comprised of weapons support equipment (WSE) which includes weapons handling equipment and weapons test equipment, and logistics support equipment (LSE) such as airborne weapons containers. WSE is allocated to depot level maintenance establishments by COMNAVAIRSYSCOM as described in volume II, chapter 8.1.

8.4.2 Depot Level Maintenance Concept. Depot level maintenance activities perform scheduled (preventive) and unscheduled (corrective) maintenance actions which are beyond the scope and capability of intermediate level maintenance and are necessary to maintain or restore AWSE to inherent design levels of performance, reliability, and material condition. Depot level maintenance activities are staffed by trained personnel and equipped with specialized tools, test sets/stations, and support equipment for support equipment.

8.4.3 Depot Level and Maintenance Actions. In addition to those actions authorized at the organizational and intermediate levels, depot level maintenance activities are authorized to perform all repair, replacement,

modification, and overhaul actions prescribed by the applicable equipment maintenance plans, technical manuals, and technical directives approved and issued by COMNAVAIRSYSCOM. Depot actions include test and inspection functions necessary for fault isolation (troubleshooting) and repair verification, and calibration, as appropriate. When deemed necessary by competent authority, depot level activities may be directed to manufacture AWSE components to meet operational requirements, and to provide assistance to the organizational and intermediate levels requiring professional engineering or technical support service functions.

8.4.4 Maintenance Training Requirements. Maintenance training is a continuous and ongoing process, conducted to ensure that personnel who operate, maintain, and support weapons systems and associated equipments are qualified to perform their respective functions. Formal and on-the-job maintenance training, for armament weapons support equipment (AWSE) processed at industrial level maintenance activities, may be augmented through the use of Engineering Technical Specialists/Fleet Weapons Support Team provided by the Naval Air Warfare Center, Weapons Division, volume I, chapter 4.4 provides procedures for requesting field service training and technical assistance. Volume I, section 6 provides additional information on all aspects of Naval Airborne Weapons Maintenance Training.

8.4.5 Weapons Test Equipment. Weapons test equipment is comprised of specialized paraphernalia of electronic or electrical design used to test, maintain, or service airborne weapons. Figure 8-4-1 depicts weapons test equipment assignments to the AUR Depot establishments who are authorized to perform the following maintenance actions in accordance with applicable COMNAVAIRSYSCOM technical manuals listed in figure 8-4-2, in addition to those inspections, reports, and directives prescribed in chapter 8.1. Any maintenance action that results in a change to the design, configuration or test procedures of a test set that is approved for proximity testing shall be reported to the WSESRB by the APML of that system.

Test Equipment	Weapons System	Weapons Station Fallbrook	Weapons Station Yorktown	NAVSURF-WARCENDIV-CRANE	Texas Inst.	Naval Airborne Weapons Maintenance Unit One Guam (Note-1)
TS-4081/G	AMRAAM	X	X	X		
AN/GYO-76A(V)2	AMRAAM	X	X		X	
AN/DPM-21H	SPARROW	X	X			
AN/DPM-21J	SPARROW	X	X			
AN/DSM-156D	SPARROW					X
AN/DSM-132A	SIDEWINDER	X	X			X
AN/DSM-140	SIDEWINDER	X	X			X
AN/DSM-152B	SIDEWINDER	X	X			X
AN/DSM-96B	WALLEYE	X	X			X
AN/DSM-130(V)	PHOENIX		X	X		X

Note: 1. Designated Intermediate Level Maintenance reference Volume II, Paragraph 1.1.1

Figure 8-4-1. Assignment of Weapons Test Equipment to Depot Level Maintenance Establishments

Test Equipment	Weapons System	Weapons Station Fallbrook	Weapons Station Yorktown	Boeing Aerospace	NAVSURF-WARCENDIV-CRANE	Texas Inst.	Naval Airborne Weapons Maintenance Unit One Guam (Note-1)
AN/DSM-127	HARPOON		X				
AN/DSM-127C	SLAM/SLAM ER			X			
A/F24T-234	PENGUIN		X				
AN/DSM-160B	HARM	X	X				X
TTU-519/E	MAVERICK	X	X				
SMU-127/E	MAVERICK	X	X				
SM-787/DSM	MAVERICK	X	X				
A/E37T-30	SIDEARM	X					
CITE-2100	JSOW					X	

Note: 1. Designated Intermediate Level Maintenance reference Volume II, Paragraph 1.1.1

Figure 8-4-1. Assignment of Weapons Test Equipment to Depot Level Maintenance Establishments (Cont'd)

Test Equipment	Weapons System	Depot Level Maintenance Technical Manual
AN/DSM-130(V)	PHOENIX	NAVAIR 16-30DSM-130-1-1, Test Set Intermediate Level Maintenance with Illustrated Parts Breakdown
AN/DSM-127	HARPOON	AT-820HN-NWS-SERIES, Test Set Intermediate Level Maintenance with Illustrated Parts Breakdown
AN/DSM-127C	SLAM/SLAM ER	AT-820HN-NWS-SERIES, Test Set Intermediate Level Maintenance with Illustrated Parts Breakdown
AN/DSM-160	HARM	NAVAIR 16-30DSM-160, Test Set Intermediate Level Maintenance with Illustrated Parts Breakdown
TS-4081/G	AMRAAM	TO 33D9-30-38-1, Operation and Maintenance with Illustrated Parts Breakdown for Test Guidance Missile Circuitry
AN/GYQ-76A(V)2	AMRAAM	TO 33D9-53-108-1, Field Level Maintenance with Illustrated Parts Breakdown
TTU-519/E	MAVERICK	NAVAIR AT-820YA-GMT-000 Test Set Intermediate Level Maintenance with Illustrated Parts Breakdown
SMU-127/E	MAVERICK	NAVAIR AT-820YA-000 Laser Target Simulator Operation and Maintenance with Illustrated Parts Breakdown
SM-787/DSM	MAVERICK	TO 3309-14-70-1 Operation and Maintenance Instruction with Illustrated Parts Breakdown
A/E37T-30	SIDEARM	NAVAIR 17-15-509, Test Set Intermediate Level Maintenance with Illustrated Parts Breakdown
A/F 24T-234	PENGUIN	NAVAIR 16-30 AGM-119B-1 Test Equipment Description, Intermediate Level Maintenance NAVAIR 16-30 AGM-119B-2 Test Equipment Maintenance Procedures with Illustrated Parts Breakdown NAVAIR 16-30 AGM-119B-3 Test Equipment Instrument Alignment Procedures
AN/DPM-21H	SPARROW	NAVAIR 16-30DPM-21-1-1, Test Set Intermediate Level Maintenance with Illustrated Parts Breakdown
AN/DPM-21J	SPARROW	NAVAIR 16-30DPM-21-1-1, Test Set Intermediate Level Maintenance with Illustrated Parts Breakdown
AN/DSM-156D	SPARROW	NAVAIR 16-30DSM-156B-1, Test Set Intermediate Level Maintenance with Illustrated Parts Breakdown
AN/DSM-152B	SIDEWINDER	NAVAIR 16-30DSM-152A-1, Test Set Intermediate Level Maintenance with Illustrated Parts Breakdown
AN/DSM-96B	WALLEYE	NAVAIR 16-30DSM-96A-1, Test Set Intermediate Level Maintenance with Illustrated Parts Breakdown

Figure 8-4-2. Weapons Test Equipment Technical Publications Matrix

8.4.5.1 Certification. Confidence in a weapons stockpile and the probability of mission success depend on the integrity of the weapons test system to provide an acceptable degree of assurance that weapons with a high probability of success are issued to the operating forces. Designated weapons test systems are used for initial acceptance, maintenance, rework, or quality evaluation of air launched guided weapons (including surface and sub-surface variants) which must be certified in accordance with NAVAIRINST 5400.67B (Certification Program for Navy Air Launched Guided Weapons) (NOTAL). The test set certification program assures that a test system is capable by correctly assessing the quality of the item being tested. Certification is an evaluation of all test system elements, demonstration of acceptable correlation among similar test systems, and satisfactory long term performance and stability. The certification program is applicable to all designated test systems (automatic or manual) associated with the testing of air launched missiles and their integral components which are procured and maintained by COMNAVAIRSYSCOM. Responsibilities of the test set certification program are:

1. COMNAVAIRSYSCOM. Provides overall management authority, technical guidance, and resource sponsorship for the conduct of the certification program.

2. Naval Warfare Assessment Station (NWASTA) Corona, CA, provides technical management for the implementation of the weapons test equipment certification program.

3. Difference in recertification policy between production and maintenance test sets.

8.4.5.2 Certification under Acquisition Reform. Acquisition Reform has generated a modification to the certification program. With a change from the three tiered maintenance process to a two tiered process, and the contractor assuming responsibility for the ready for issue status of all-up-round (AUR) missile, the contractor has been released from the process of mandatory certification of the lower level test equipment. The AUR missile test equipment requires an initial certification with follow-on monitoring, as required, to ensure compliance with the performance specifications.

8.4.5.3 Calibration. All peripheral precision measuring equipment used for test, diagnostics, or alignment of the weapons test equipment item shall be calibrated in accordance with NAVAIRINST 13640.1A (NOTAL) (Naval Air Systems Command Metrology and Calibration Program) and each item's calibration cycle established by the NWASTA Corona Metrology Engineering Branch. The items consist of meters, spectrum analyzers, pressure

gauges, etc. Calibration inspections consist of scheduled periodic performance evaluations and correction requirements. Items requiring calibration are listed in NAVAIR 17-35MTL-1 (Metrology Requirements List) (NOTAL). Depot level maintenance personnel shall ensure that all equipment requiring calibration are identified under the Metrology Automated System for Uniform Recall and Reporting (MEASURE) system. Special attention must be given to new or recently received items which may not have been previously identified. Procedural details are described in the MEASURE Users Manual.

8.4.5.3.1 Calibration Contractor Facilities. The contractor has been released from complying with MIL-STD-45662. This means that the internal calibration services and standards are no longer monitored by government personnel.

8.4.5.4 Discrepancy Reports. Discrepancy reports are initiated against AWSE at Naval Airborne Weapons Maintenance Units and Naval Weapons Support Facilities when a test equipment discrepancy is discovered during the performance of any assigned maintenance action. Discrepancy reporting procedures are contained in Volume I, Chapter 4.6. In addition Naval Air Warfare Center Detachment personnel report weapons test equipment failures and inoperability to the cognizant COMNAVAIRSYSCOM Assistant Program Manager Logistics (APML) via E-Mail.

8.4.5.5 Maintenance Data System Reporting. All test equipment maintenance actions performed by depot level maintenance establishments must be entered into the maintenance data system. Maintenance actions are reported on OPNAV 8600/12. Appendix A, page A-38, depicts an example of this form. Appendix A contains procedures and instructions for the completion of these forms. The maintenance data system for airborne weapons containers is described in Volume I Section 5.

8.4.5.6 Record Keeping and Reporting. In addition to complying with local command reporting requirements, depot level maintenance establishments comply with WSE tracking transaction reporting requirements when WSE items are transferred. Figure 8-1-3 depicts an example of a WSE tracking transaction report. Chapter 8.1 contains further information on the WSE tracking program.

8.4.6 Weapons Handling Equipment. Weapons handling equipment is a specialized category of WSE that provides direct support to the airborne weapon. Weapons handling equipment includes both peculiar and common ordnance handling and transportation equipment, as well as tools used for canning and decanning, magazine handling, and assembly of weapons and ordnance related commodities. AUR Depots and DOPs perform the fol-

lowing maintenance actions in accordance with applicable COMNAVAIRSYSCOM technical manuals and in addition to those inspections, reports, and directives prescribed in chapter 8.1.

8.4.6.1 Record Keeping and Reporting. In addition to conforming to local command reporting requirements, AUR Depots and DOPs shall record WSE maintenance actions and comply with tracking transaction reporting requirements prescribed in chapter 8.1 when WSE items are transferred.

8.4.6.2 Weight Testing and Verification. Weapons handling equipment used for lifting, such as hoisting beams and strongbacks, must be periodically weight tested to assure maximum safety and efficiency in its operation. All weight testing is conducted in accordance with the individual requirements of each item of weapons handling equipment.

8.4.6.3 Support equipment (SE), aviation weapons support equipment (AWSE), and weight handling equipment (WHE) preservation is designed to protect the material condition of equipment which is not expected to be used for extended periods of time. This equipment may be preserved at any time, regardless of material condition, when it is determined to be in the best interest of the equipment or activity. The AMO/Weapons Officer is responsible for determining when this equipment is required to be placed in preservation. For equipment placed in preservation per applicable MIMs or directives, all PMS inspections may be deferred until the equipment is removed from preservation. Equipment not placed in preservation shall receive corrosion prevention/treatment per applicable MIMs/MRCs. For standardized management of personnel and resources, activities may use the following categories to determine the level of preservation desired.

1. Category A - SE/AWSE/WHE which has anticipated usage within the next 90 days. This equipment shall be maintained under current SE/PMS directives.

2. Category B - SE/AWSE/WHE which could possibly be used within the next 180 days. This equipment may be placed in a minimum of level I.

3. Category C - SE/AWSE/WHE not needed for extremely long periods of time (in excess of 180 days) may be placed in level II or III preservation depending on the resources at the geographical area.

8.4.6.4 Levels of preservation SE/AWSE/WHE are defined below. Dehumidification (level III) is the preferred method of preservation.

1. Level I: 0 - 90 days (plus or Minus 3 days).

2. Level II: 0 - 1 year.

3. Level III: 0 - indefinite.

8.4.7 Logistics Support Equipment. Logistics support equipment (LSE) consists of all equipment with facility-related functions, including airborne weapons containers. Such equipment is in the custody of many departments under the general heading of packaging, handling, storage or stowage, and transportability (PHS&T). LSE includes that equipment used for the packaging, bulk handling, storage or stowage, and transportation of weapons and weapon components within the weapon logistics cycle ranging from manufacturer to the using activities magazine spaces. The using custodian is responsible for LSE maintenance within that activity's authorized capability while having custody of the item. If maintenance is required that is beyond the capability of the user, it shall be transferred to the next higher level of maintenance. Ultimate responsibility for equipment maintenance lies with the reporting custodian. Depot level maintenance establishments are assigned broad responsibilities for the maintenance of airborne weapons containers and other LSE as described below.

8.4.7.1 Airborne Weapons Containers. These LSE items are the packaging hardware of the PHS&T element of the weapons logistics system whose requirements are delineated in MIL-STD-1367 (NOTAL). Since container maintenance derives its priority from the mission-essential nature of the weapons themselves, containers must be capable of protecting their contents during all handling, shipping, and storage evolutions. Container maintenance is generally performed at two or more locations within the depot level maintenance establishment: weapons repair facilities located within the authorized AUR Depots explosive operating buildings where airborne weapons are assembled, disassembled, tested, and containerized; and container repair facilities which are DOP industrial facilities geographically removed from the explosive operating areas. Figure 8-4-4 depicts authorized container maintenance actions performed by the repair facilities listed in figure 8-4-5. Depot level container maintenance is conducted in accordance with the container volume of the Industrial Processing Guide (IPG) and the applicable COMNAVAIRSYSCOM approved technical manual. Each air launched missile system's IPG identifies material requirements for the processing of the air launched missile and provides industrial standards for work flow and work measurement. The IPG also provides a uniform work breakdown structure for the accomplishment of all required maintenance actions, including incorporation of authorized modifications. The IPG

From: (Activity)

To: COMCOMNAVAIRSYSCOM (AIR-3.1)

Info: NAVAIRWARCENWPNDIV, Point Mugu, CA (Code-362000E)
NAVAMMOLOGCEN-551 (Air-to-Air)
NAVAMMOLOGCEN-552 (Air-to-Grd)
Depot-NAVAVNDEPOT/Contractor/NTR/AFPRO (as appropriate)

1. Test set Ser # down as of (date).
2. Description of problem/status.
3. Requisition (UIC/JO/XXXX) (for suspected failed component).
4. P/N complete NSN.
5. Remarks/impact.

Figure 8-4-3. Test Set Deficiency Report E-Mail

Maintenance Action	Maintenance Level	
	Weapons Repair Facility	Container Repair Facility
Container Sentencing Inspection	X	
Visual Inspection		
Interior	X	X
Exterior	X	X
Hardware Removal and Replacement		
Minor Hardware	X	X
Major Hardware	X	X
Testing		
Pressure		X
Weight		X
Integrity	X	X
Corrosion Control		
Hand Cleaning	X	X
Abrasive/Blast		X
Chemical Conversion	X	X
Paint Touchup		
Repaint (100%)		X
Repaint (25% or less)	X	X
Marking	X	X
Preservation	X	X
Lubrication	X	X
Repair		
Fiberglass Repair		X
Thermoplastics Repair		X
Metal Repair		X
Welding		
Gas Welding		X
Arc Welding		X
Thermoplastic Welding		X
Soldering		X
Condemnation Beyond Economical Repair		X
Technical Directive Compliance	X	X
Maintenance Data System Reporting	X	X
Record Keeping/Reporting	X	X

Figure 8-4-4. Assignment of Container Maintenance Actions by Maintenance Level

Container Designation	Weapons System	Weapons Station Seal Beach	Weapons Station Fallbrook	Weapons Station Yorktown	NAWMU-1, GUAM (I Level Maintenance)
CNU-295/E	HARM	X			
CNU-296/E	HARM	X			
CNU-316/E	HARM	X			
CNU-351/E	HARM	X			
CNU-352/E	HARM	X			
CNU-353/E	HARM	X			
CNU-354/E	HARM	X			
CNU-355/E	HARM	X			
CNU-370/E	HARM	X			
MK 592 MOD 1	HARPOON/SLAM/SLAM ER	X		X	
MK 607 MOD 0	HARPOON	X		X	
MK 618 MOD 1	HARPOON	X		X	
MK 619 MOD 0	HARPOON	X		X	
MK 620 MOD 0	HARPOON/SLAM	X		X	
MK 621 MOD 0	HARPOON/SLAM/SLAM ER	X		X	
MK 622 MOD 0	HARPOON/SLAM/SLAM ER	X		X	
MK 630 MOD 0	HARPOON	X		X	
MK 631 MOD 0	HARPOON	X		X	
MK 632 MOD 0	HARPOON	X		X	
MK 641 MOD 0	HARPOON/SLAM	X		X	
MK 642 MOD 0	HARPOON/SLAM	X		X	
MK 648 MOD 0	HARPOON	X		X	
MK 649 MOD 0	HARPOON	X		X	
MK 650 MOD 0	HARPOON	X		X	
MK 651 MOD 0	HARPOON	X		X	
MK 654 MOD 0	HARPOON	X		X	
MK 655 MOD 0	HARPOON	X		X	
MK 656 MOD 0	HARPOON	X		X	
MK 658 MOD 0	HARPOON/SLAM/SLAM ER	X		X	
MK 664 MOD 1	HARPOON	X		X	
MK 666 MOD 0	HARPOON	X		X	

Figure 8-4-5 Assignment of Container Maintenance Responsibilities to Depot Level Maintenance Establishments

Container Designation	Weapons System	Weapons Station Seal Beach	Weapons Station Fallbrook	Weapons Station Yorktown	NAWMU-1, GUAM (I Level Maintenance)
MK 694 MOD 1	HARPOON	X		X	
CNU-256/E	HARPOON/SLAM/SLAM ER	X		X	
CNU-257/E	HARPOON/SLAM/SLAM ER	X		X	
CNU-488/E	HELLFIRE		X	X	
CNU-132/E	MAVERICK	X		X	
CNU-477/E	MAVERICK	X		X	
CNU-472/E	MAVERICK	X		X	
CNU-443A/E	PENGUIN			X	
CNU-450/E	PENGUIN			X	
CNU-159/E	PHOENIX	X		X	
CNU-165/E	PHOENIX	X		X	
CNU-233/E	PHOENIX	X		X	
CNU-234/E	PHOENIX	X		X	
CNU-241/E	PHOENIX	X		X	
CNU-242A/E	PHOENIX	X		X	
CNU-242/E	PHOENIX	X		X	
CNU-376/E	PHOENIX	X		X	
CNU-377/E	PHOENIX	X		X	
CNU-386/E	PHOENIX	X		X	
CNU-283A/E	SIDEARM	X	X	X	
CNU-434/E	SIDEARM	X	X	X	
MK 270 MOD 1	SIDEARM	X	X	X	
MK 287 MOD 0	SIDEARM	X	X	X	
MK 386 MOD 0	SIDEARM	X	X	X	
CNU-189/E	SIDEWINDER	X	X	X	
CNU-274/E	SIDEWINDER	X	X	X	
CNU-283A/E	SIDEWINDER	X	X	X	
CNU-283/E	SIDEWINDER	X	X	X	
CNU-286/E	SIDEWINDER	X	X	X	
CNU-287/E	SIDEWINDER	X	X	X	
CNU-300/E	SIDEWINDER	X	X	X	
CNU-435/E	SIDEWINDER	X	X	X	

Figure 8-4-5 Assignment of Container Maintenance Responsibilities to Depot Level Maintenance Establishments (Cont'd)

Container Designation	Weapons System	Weapons Station Seal Beach	Weapons Station Fallbrook	Weapons Station Earle	Weapons Station Yorktown	NAWMU-1, GUAM (I Level Maintenance)
MK 16 MOD 0	SIDEWINDER	X	X		X	
MK 33 MOD 0	SIDEWINDER	X	X		X	
MK 34 MOD 0	SIDEWINDER	X	X		X	
MK 37 MOD 0	SIDEWINDER	X	X		X	
MK 287 MOD 0	SIDEWINDER	X	X		X	
MK 314 MOD 0	SIDEWINDER	X	X		X	
MK 386 MOD 0	SIDEWINDER	X	X		X	
MK 418 MOD 0	SIDEWINDER	X	X		X	
MK 418 MOD 1	SIDEWINDER	X	X		X	
MK 430 MOD 0	SIDEWINDER	X	X		X	
MK 766 MOD 0	SLAM			X	X	
CNU-595/E	SLAM-ER			X	X	
MK 724 MOD 1	SLAM			X	X	
CNU-125/E	SPARROW	X			X	
CNU-166/E	SPARROW	X			X	
CNU-199/E	SPARROW	X			X	
CNU-240/E	SPARROW	X			X	
CNU-379/E	SPARROW	X			X	
CNU-380/E	SPARROW	X			X	
HALFPACK W&F	SPARROW	X			X	
MK 12 MOD 0, 1 & 3	SPARROW	X			X	
MK 224 MOD 0	SPARROW	X			X	
MK 470 MOD 0 & 1	SPARROW	X			X	
ROIS and VENDOLATOR G&C	SPARROW	X			X	
CNU-333/E	TOW	X				
CNU-553/E	TOW	X				
CNU-154A/E	WALLEYE	X	X		X	
CNU-154B/E	WALLEYE	X	X		X	
CNU-154C/E	WALLEYE	X	X		X	
CNU-306/E	WALLEYE	X	X		X	

Figure 8-4-5 Assignment of Container Maintenance Responsibilities to Depot Level Maintenance Establishments (Cont'd)

Container Designation	Weapons System	Weapons Station Seal Beach	Weapons Station Fallbrook	Weapons Station Yorktown	NAWMU-1, GUAM (I Level Maintenance)
CNU-356/E	WALLEYE	X	X	X	
MK 13 MOD 0	WALLEYE	X	X	X	
CNU-150/E	WALLEYE	X	X	X	
MK 423 MOD 0	WALLEYE	X	X	X	
MK 424 MOD 0	WALLEYE	X	X	X	
MK 425 MOD 0	WALLEYE	X	X	X	
MK 426 MOD 0	WALLEYE	X	X	X	
MK 493 MOD 0	WALLEYE	X	X	X	
MK 517 MOD 0	WALLEYE	X	X	X	
MK 617 MOD 0	WALLEYE	X	X	X	
CNU-415/E	AMRAAM	X		X	
CNU-431/E	AMRAAM	X		X	
CNU-402/E	AMRAAM	X		X	
CNU-403/E	AMRAAM	X		X	
CNU-463/E	AMRAAM	X		X	
CNU-464/E	AMRAAM	X		X	
CNU-452/E	AMRAAM	X		X	
CNU/E	JSOW				X

Figure 8-4-5. Assignment of Container Maintenance Responsibilities to Depot Level Maintenance Establishments (Cont'd)

Air Launched Missile Container	Depot Level Maintenance Technical Manual
SPARROW	NAVAIR 11-75AIM-1, Guided Missile System Shipping and Storage Containers, All MKs and MODs, SPARROW III, Intermediate and Depot Level Maintenance with Illustrated Parts Breakdown
AMRAAM	NAVAIR 11-75-65, Intermediate Level Maintenance and Depot Level Maintenance with Illustrated Parts Breakdown, AMRAAM Containers
SIDEWINDER	NAVAIR 11-75-64, Intermediate and Depot Level Maintenance with Illustrated Parts Breakdown, Shipping and Storage Containers, all MKs and MODs
PHOENIX	NAVAIR 01-AIM54-2-4, Guided Missile AIM-54 PHOENIX Containers, Propulsion Section, Wing and Fin Assembly, Control Section, Warhead, and All-Up-Round, Intermediate Maintenance Instruction with Illustrated Parts Breakdown
HARM	NAVAIR 11-75AGM88A-1, Shipping and Storage Containers, HARM Guided Missile, Intermediate and Depot Level Maintenance with Illustrated Parts Breakdown
MAVERICK	NAVAIR AW-001CE-RIP-000, Intermediate and Depot Level Maintenance with Illustrated Parts Breakdown MAVERICK Guided Missile Shipping and Storage Containers CNU-132/E, CNU-447/E, CNU-472/E
SIDEARM	NAVAIR 11-75-64, Intermediate and Depot Level Maintenance with Illustrated Parts Breakdown, Shipping and Storage Container, all MKs and MODs
PENGUIN	NAVAIR 11-75CNT-5, Intermediate and Depot Level Maintenance with Illustrated Parts Breakdown, PENGUIN Missile Shipping and Storage Containers, CNU-443A/E and CNU-450/E
HARPOON/ SLAM/ SLAM-ER	a. AW-001HN-NWS-000 HARPOON Missile/SLAM Shipping Containers for AUR configurations, AIR, ASROC Wings&Fins and Radome, with Illustrated Parts Breakdown. b. AW-001HN-NWS-010 HARPOON Missile Shipping Containers for Missile Sections, TARTAR and CAP/CAN Wings and Fins, and WRAs/SRAs with Illustrated Parts Breakdown.
HELLFIRE	HELLFIRE Container Maintenance is a Work Package in the Missile Maintenance Manual AW-820YB-MIB-100
TOW	NAVAIR 11-75BGM-71-1, Intermediate Inspection, Maintenance, and Packaging Procedures
WALLEYE	NAVAIR 11-70KAA-1, Shipping and Storage Containers for WALLEYE Guided Weapon System, all Mks and MODs, Naval Weapon Intermediate Level Maintenance

Figure 8-4-5. Air Launched Missile Container Technical Publications Matrix.

consists of a general information volume along with additional volumes dedicated to particular missiles. IPG data is used to facilitate workload planning, programming, and budgeting to enhance productivity and efficiency. Relevant technical documentation and publication are listed in figure 8-4-6.

8.4.7.1.1 Weapons Repair Facilities Container Functions. In addition to the general maintenance actions prescribed by chapter 8.1, AUR Depots perform the following specific functions.

8.4.7.1.1.1 Container Sentencing Inspection. Generally performed pierside on fleet return material, the container sentencing inspection is a visual screening, ensure that a containers do not exhibit deficiencies which adversely affect personnel or safety or expose the contents to possible damage or deterioration, and to determine whether the containers are serviceable or unserviceable. Weapons repair facility personnel perform this inspection. The exteriors of the containers are inspected for the presence of AUR Depot seals, correct markings, corrosion, and/or damage. Interiors are inspected for evidence of corrosion, moisture intrusion, and damage. Containers having no disqualifying deficiencies are redessiccated (if required) and returned to code A status. Those having minor defects are repaired by weapons repair facility personnel. Containers which require repairs beyond the capability of the weapons repair facility are sentenced to the container repair facility. On occasion, containers may be inspected afloat by Missile Presentencing Inspection (MPI) teams to expedite the process. (Refer to appendix J for further MPI details and procedures.)

8.4.7.1.1.2 Minor Hardware Removal and Replacement. Weapons repair facility personnel remove and replace minor container hardware components as a result of deficiencies discovered during the container sentencing inspection. Items such as desiccant and the container humidity indicator are checked and replaced (if required) in accordance with the applicable authorized technical manual, and NAVAIR 01-1A-75 (Airborne Weapons and Associated Equipment, Consumable Material Applications and Hazardous Material Authorized Use List) (NOTAL).

8.4.7.1.1.3 Testing. Container integrity tests are performed after completion of container maintenance actions affecting the container in accordance with applicable authorized technical manual requirements.

8.4.7.1.1.4 Cleaning and Corrosion Control. Cleaning consists of the removal of contaminants such as dirt, grease, salt spray, oil, and other elements that aid corro-

sion. Cleaning requires a knowledge of the materials and methods needed to remove each of these contaminants. As a general rule, the mildest cleaning method available that will work effectively is used. The corrosion manual addresses the specific procedures to be followed for each type of metal to be cleaned, as well as the proper material to be used. The corrosion control manual for containers at depot level maintenance facilities is titled Airborne Weapons and Associated Equipment, Consumable Material Applications and Hazardous Material Authorized Use List. The Corrosion manual's technical manual identification number is NAVAIR 01-1A-75 (NOTAL). NAVAIR 01-1A-75 addresses the authorized materials, application, and procedures for preventive and corrective corrosion control measures. Specifically, the corrosion manual addresses the procedures to be followed for each type of substrate to be cleaned, as well as the proper material to be used. See volume I, section 4 for further details. All containers are subject to preservation and painting procedures as part of depot level maintenance. Weapons repair facility personnel clean all surfaces before applying the coating, ensuring that no cleaning material residue is trapped in fasteners, points, etc.; such areas can become contaminated easily and corrosion will occur.

8.4.7.1.1.5 Paint Touchup. While material such as oils and sealants act as a preservative, painting is generally the most effective means of preserving metal. The corrosion manual NAVAIR 01-1A-75 (NOTAL) lists the cleaning materials, primers, and paints used in the preservation and corrosion control of airborne weapon containers. See volume I, section 4 for further details. Painting is limited to the touchup of areas which have been damaged by abrasion, superficial scratches, or in areas where the paint has been removed in order to treat corrosion. Touchup painting is limited to 15 to 25 percent of any section or component. Painting requirements that exceed this criterion must be performed in an authorized painting area (usually an enclosed paint booth). Container unique materials, applications, and procedures are listed in the applicable authorized technical manuals.

8.4.7.1.1.6 Marking. Weapons repair facility personnel restencil all stenciling and markings obliterated or removed during repair or painting in accordance with the applicable authorized technical manual, and NAVAIR 01-1A-75 (Airborne Weapons and Associated Equipment, Consumable Material Applications and Hazardous Material Authorized Use List) (NOTAL). Container unique hazardous materials are listed in NAVAIR 01-1A-75.

8.4.7.1.1.7 Preservation. Preservation and sealing shall be accomplished only when inspection results war-

rant and during maintenance procedures when replacement parts require it. Preservatives and sealants are applied in the missile assembly area using approved materials and methods listed in accordance with the applicable authorized technical manuals, and NAVAIR 01-1A-75 (Airborne Weapons and Associated Equipment, Consumable Material Applications and Hazardous Material Authorized Use List) (NOTAL).

8.4.7.1.1.8 Lubrication. Weapons repair facility personnel perform lubrication in accordance with the applicable authorized technical manual. Container gaskets are lubricated to retain pliability and corrosion preventative compounds are applied to camlocks to assure proper functioning, and NAVAIR 01-1A-75 (Airborne Weapons and Associated Equipment, Consumable Material Applications and Hazardous Material Authorized Use List) (NOTAL).

8.4.7.1.1.9 Discrepancy Reporting. Discrepancy reports are initiated at depot level maintenance when a systematic discrepancy is discovered which impairs the use of the container during the performance of any of the assigned weapons repair facility maintenance actions. Discrepancy reporting procedures are contained in OPNAVINST 5102.1C and volume I chapter 4.6.

8.4.7.1.1.10 Record Keeping and Reporting. Depot level maintenance is responsible for all record keeping and reporting actions related to container maintenance. Reporting requirements include updating data contained in the Conventional Ammunition Integrated Management System, which is updated via transaction item reporting and Serialized Lot Item Tracking entries. The Conventional Ammunition Integrated Management System is described in volume I section 5.

8.4.7.1.2 Container Repair Facility Functions. In addition to the general maintenance actions prescribed by chapter 8.1, designated overhaul points (DOPs) perform the following specific functions.

8.4.7.1.2.1 Visual Inspection. Container repair facility personnel conduct a visual inspection of all containers received from weapons repair facilities to screen the containers for defects. The exteriors of the containers and cradles are inspected for the presence of weapon station seals, correct markings, corrosion, and damage. The containers' interiors are inspected for evidence of corrosion, moisture intrusion, and damage. Those containers having no disqualifying deficiencies are redesiccated (if required) and returned to code A. The intent of sentencing and inspection is to ensure that a container does not exhibit deficiencies which would adversely affect personnel,

safety, or expose the container contents to possible damage or deterioration. All other types of deficiencies are considered less significant and should not prevent the turnaround of a container to a code A asset. All visual inspections are conducted in accordance with the applicable authorized technical manual, and NAVAIR 01-1A-75 (Airborne Weapons and Associated Equipment, Consumable Material Applications and Hazardous Material Authorized Use List) (NOTAL).

8.4.7.1.2.2 Major and Minor Hardware Removal and Replacement. Container repair facility personnel remove and replace major and minor container hardware components as a result of deficiencies discovered during the visual inspection. Items such as desiccant and the container humidity indicator are checked and replaced (if required) in accordance with the applicable authorized technical manual, and NAVAIR 01-1A-75 (Airborne Weapons and Associated Equipment, Consumable Material Applications and Hazardous Material Authorized Use List) (NOTAL).

8.4.7.1.2.3 Repairing Plastic or Fiberglass. Container repair facility personnel repair shipping and storing containers which have fiberglass components to the extent necessary to perform their designed function. Fiberglass repair includes repair of surface gouges or small punctures, as well as large damaged areas. Container repair facility personnel clean affected areas, apply replacement patching, and sand or grind affected areas to achieve uniform density and form and fit. All repair actions are performed in accordance with the applicable authorized technical manual, and NAVAIR 01-1A-75 (Airborne Weapons and Associated Equipment, Consumable Material Applications and Hazardous Material Authorized Use List) (NOTAL).

8.4.7.1.2.4 Fabrication of Replacement Hardware. Container repair facilities fabricate both internal and external replacement hardware in accordance with design specifications, container drawings, and the applicable authorized technical manual. Styrofoam or wooden dunnage is fabricated for internal blocking and bracing container contents. In addition, certain latches, bands, strapping material, and tie-down materials may be fabricated when replacement parts do not conform to specifications, are not in stock, or are inadequate for container use. Stenciling materials and nonactual sealing gaskets may also be fabricated for repair operations if materials and fabrication materials are approved.

8.4.7.1.2.5 Welding. Welding is the most common method of repairing container punctures, broken joints, severe cracks, broken clevis, loose brackets, support as-

semblies, and handle and latch assemblies. Welding procedures and materials are accomplished in accordance with MIL-W-6858 (NOTAL) and the applicable authorized technical manual.

8.4.7.1.2.6 Testing. Container integrity tests are performed after completion of container maintenance actions affecting the container in accordance with applicable authorized technical manual requirements.

8.4.7.1.2.7 Cleaning and Corrosion Control. Cleaning consists of the removal of contaminants such as dirt, grease, salt spray, oil, and other elements that aid corrosion. Cleaning requires a knowledge of the materials and methods needed to remove each of these contaminants. As a general rule, the mildest cleaning method available that will work effectively is used. The corrosion manual addresses the specific procedures to be followed for each type of metal to be cleaned, as well as the proper material to be used. The corrosion control manual used for containers at depot level maintenance facilities is titled (Airborne and Associated Equipment Consumable Material Application and Hazardous Material Authorized use List). The corrosion manual's technical manual identification number is NAVAIR 01-1A-75 (NOTAL). NAVAIR 01-1A-75 (NOTAL) addresses the authorized materials, applications, and procedures for preventive and corrective corrosion control measures. Specifically, the corrosion manual addresses the procedures to be followed for each type of substrate to be cleaned, as well as the proper material to be used. See volume I, section 4 for further details. All containers are subject to preservation and painting procedures as part of depot level maintenance. All cleaning and corrosion control actions are conducted in accordance with the applicable authorized technical manual.

8.4.7.1.2.8 Painting. While material such as oils and sealants act as a preservative, painting is generally the most effective means of preserving metal. The corrosion manual NAVAIR 01-1A-75 (NOTAL) lists the cleaning materials, primers, and paints used in the preservation and corrosion control of airborne weapons containers. Container repair facilities are authorized to perform complete container repainting. Container unique materials, applications, and procedures are listed in the applicable authorized technical manuals, and NAVAIR 01-1A-75 (NOTAL). See volume I, section 4 for further details.

8.4.7.1.2.9 Marking. Container repair facility personnel shall restencil all markings obliterated or removed during repair or painting in accordance with the applicable authorized technical manual and NAVAIR 01-1A-75 (NOTAL). See volume I, section 4 for further details.

8.4.7.1.2.10 Preservation. Preservation and sealing shall be accomplished only when inspection results warrant and during maintenance procedures when replacement parts require it. Preservatives and sealants are applied in the missile assembly area using approved materials and methods listed in accordance with the applicable authorized technical manuals, and NAVAIR 01-1A-75 (Airborne Weapons and Associated Equipment, Consumable Material Applications and Hazardous Material Authorized Use List) (NOTAL).

8.4.7.1.2.11 Lubrication. Container repair facility personnel perform lubrication in accordance with the applicable authorized technical manual. Container gaskets are lubricated to retain pliability and corrosion preventative compounds are applied to camlocks to assure proper functioning, and NAVAIR 01-1A-75 (Airborne Weapons and Associated Equipment, Consumable Material Applications and Hazardous Material Authorized Use List) (NOTAL).

8.4.7.1.2.12 Grit Blasting. Most surface corrosion and intergranular corrosion can be treated using applicable cleaning and corrosion control material, including abrasive nylon matting, detergent, cleaning solvent, or mechanical methods. Removal of heavy corrosion, surface pitting, and preparation of containers for complete painting is usually accomplished using a hand-held grit blaster. Grit Blasting, is the most effective method for removing surface corrosion and deep scratches without damaging the structural integrity and utility of the container. Grit Blasting, operations allow for complete surface stripping of corrosion and primer, repriming, and the complete repainting of containers.

8.4.7.1.2.13 X-raying. X-raying involves a nondestructive inspection used primarily to assess the quality and structural integrity of welded joints, seals, and brackets. Container repair facilities perform portable X-ray of affected welds when inspection and acceptance criteria are critical and to insure proper protection of the internal contents during storage and transportation of air launched weapons and components.

8.4.7.1.2.14 Technical Directives. In addition to complying with technical directives, designated overhaul points (DOPs) also assist in the development and review of engineering change proposals, development of the resulting technical directives, and verification of the technical directives prior to implementation.

8.4.7.1.2.15 Record Keeping and Reporting. Depot level maintenance is responsible for all record keeping and reporting actions related to container maintenance.

Reporting requirements include updating data contained in the Conventional Ammunition Integrated Management System, which is updated via transaction item reporting and Serialized Lot Item Tracking entries. The Conventional Ammunition Integrated Management System is described in volume I section 5.

8.4.7.2 Ship Loading and Underway Replenishment Equipment. Ship loading and underway replenishment equipment includes specialized handling and transfer devices which provide support to the packaged weapon during ships' loading and underway replenishment operations. Examples of ship loading and underway replenishment equipment include connected replenishment slings, vertical replenishment pole pendants, spreader bars, beams, missile transfer dollies, etc. All equipment is primarily used for ships' loading and unloading and ship-to-ship transfer operations involving general supplies and explosive ordnance commodities.

8.4.7.3 Installed Shipboard and Shore-Based Equipment. Installed shipboard and shore-based equipment includes both specialized and general equipment provided as a part of the basic facility which functions in support of weapons handling and transfer operations. Examples of such equipment include mechanical dunnaging, C-grabs, bi-rail or monorail hoists, tie-downs, davits, bomb elevators, conveyors, and other fixed or moveable handling equipment.

8.4.7.4 Industrial Material Handling Equipment. Industrial material handling equipment is comprised of commercially available industrial equipment which is approved for use in ammunition and explosive ordnance handling operations. Examples include such items as forklifts, warehouse tractors, pallet trucks, platform trucks, etc.

8.4.7.5 Ordnance Handling Vehicles. Ordnance handling vehicles include those vehicles which have been approved for over-the-road transport and handling of ammunition and explosive ordnance. Examples of such equipment include trucks, trailers, bomb service trucks, etc.

8.4.8 Customer Service. As used in this instruction, customer service is the provision of depot level services, including emergency check, test, minor repair, manufacture of parts, heat treatment, plating, machine shop services, or other efforts as directed by COMCOMNAVAIRSYSCOM in the processing of material to relieve Not Mission Capable Supply (NMCS), Partial Mission Capable Supply (PMCS), and work stoppage conditions.

8.4.8.1 Background. Customer service was instituted to provide support to fleet aviation units in their technical and material maintenance problems. This service is extended to all other aviation operating and maintenance activities and units.

8.4.8.2 Scope. The policies here apply to all operation, maintenance, or material support of aeronautical material and equipment. Customer service required for other aviation type work will be accomplished by the depot level activity, provided funds are made available to cover the cost of such service and manpower is available without jeopardizing aviation type workload.

8.4.8.3 Policy. Volume I section 2 assigns the responsibility for the repair of aeronautical components and equipment to the Navy and Marine Corps maintenance level. Particular emphasis is placed upon the repair functions within their capability. Emphasis must also be placed on developing the necessary repair capability within these intermediate maintenance activities. Customer service is intended to supplement, not replace, existing supply and intermediate level support. To avoid duplication of effort in supply and maintenance activities, requests will only be submitted or accepted from intermediate maintenance activities. Further, each request will certify that the required function is beyond the capability of the supporting intermediate maintenance activity and that a replacement could not be easily obtained.

8.4.8.4 Actions. As circumstances warrant, assistance will be provided through customer service procedures. Minor repair only includes the correction of specific discrepancies or replacement of malfunctioning minor parts requiring special tools, test equipment, or facilities not available at intermediate level activities. Material submitted for customer service must require only limited processing beyond the depth stated on the work request, or that necessary to return the component to ready-for-issue condition.

8.4.8.4.1 The program for the scheduled calibration of PME is not considered a part of customer service within the definition of this instruction. However, calibration of equipment on an unscheduled basis to preclude NMCS/PMCS and work stoppage condition may be authorized by the Aircraft Controlling Custodian (ACC) or type commander.

8.4.8.4.2 Requests from an intermediate maintenance activity for customer service shall be limited to services not involving repairs within the capability of the requesting intermediate maintenance activity. Specifically, these services will be as follows:

1. Engineering and consultation services.

2. Plating, magnaflux, heat treatment, and machinist services.
3. Chemical, physical, and metallurgical laboratory testing.
4. Check and test of equipment and components.

8.4.8.4.3 Assistance required by the intermediate maintenance activity may be requested from depot level activities to complete components delayed in process due to lack of facilities for check and test, or for processing not normally required, for example, heat treatment, plating, magnaflux, and machine shop. Such assistance may be requested by the intermediate maintenance activity from the depot level activity through the use of work request customer service (OPNAV 4790/36A). All other customer service requests originated within by the intermediate maintenance activity will be transacted through the Supply Support Center (SSC).

8.4.8.4.4 Materials beyond the repair capability of the intermediate maintenance activity, including the

manufacture of parts, shall be referred to the SSC for further action. The SSC shall determine the system availability for NMCS or PMCS and work stoppage items prior to submitting requests for depot level customer service. If it is determined that customer service support is required, SSC shall notify AIMD to prepare a work over request customer service describing the specific work that must be accomplished. SSC is responsible for transportation of customer service work between the intermediate maintenance activity and depot level activity. It is also SSC's responsibility to accumulate and maintain statistics, such as end item usage and supply data required to ensure continued fleet support.

8.4.8.4.5 Support equipment requiring extensive repairs or overhaul, including items causing NMCS, PMCS, or work stoppage conditions normally will not be processed by customer service. However, when situations warrant, COMCOMNAVAIRSYSCOM, in coordination with the cognizant functional wing, may authorize customer service for specified items to relieve NMCS, PMCS, or work stoppage conditions.

RECORD OF CHANGES			
CHANGE NO.	DATE	TITLE OR BRIEF DESCRIPTION	ENTERED BY

OPNAVINST 8000.16A

**THE NAVAL ORDNANCE MAINTENANCE
MANAGEMENT PROGRAM (NOMMP)**

**VOLUME III
SURFACE AMMUNITION**



**DEPARTMENT OF THE NAVY
OFFICE OF THE CHIEF OF NAVAL OPERATIONS
WASHINGTON D.C.**

1 JUNE 2001

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CHAPTER 1.1

Introduction

1.1.1 General. This chapter addresses functional areas of inventory management. This includes the distribution and stocking of non-nuclear ordnance; requisitioning, returning, issuing, receiving, and storing of ordnance items; the reporting of physical assets; the logistics support interfaces between the U. S. Navy and the U. S. Marine Corps, U. S. Coast Guard, and the Single Manager for Conventional Ammunition (SMCA), respectively; and the management responsibilities for mobilization planning in support of contingencies.

1.1.1.1 Asset Allocation. The inventory management functions pertain to the management of a multi billion dollar inventory consisting of a wide range of end items and components. These items represent the aggregate material on hand, or due in, needed to satisfy the combat prepositioned war reserve material requirement (PWRMR) and non-combat expenditure allocation (NCEA) non-nuclear ordnance stocking objectives, afloat and ashore. Total fleet requirements are allocated in accordance with OPNAV allocation letters, and within budget constraints. Shortages to these allocation goals are satisfied mainly through new production or maintenance actions. Assets due in from production are consigned on a "fairshare" basis to satisfy claimant PWRMR/NCEA shortfalls. Non-nuclear ordnance is allocated and distributed to the afloat forces to fill allowances of combat and auxiliary ships. A distinctive feature of the ordnance material management systems positioning of retail replenishment stocks at tidewater locations to facilitate over-the-dock accessibility for on-loading and off-loading of combatants and auxiliary ships.

1.1.2 Objective. The objective of this volume is to consolidate the existing policies and procedures governing surface ammunition (2T Cognizance (Cog)) management. These policies and procedures are designed to provide and maintain logistics support of the operating forces and ensure the maximum readiness of the in-service surface ammunition stockpile. As a corollary to its overall objective, this volume is intended to fulfill the following objectives and uses:

- a. To serve as a convenient guide and reference document for operational and support personnel who are concerned with, and responsible for, directing and implementing surface ammunition policies and procedures;
- b. To depict the relationship of the surface ammunition functional areas to the logistic lifecycle;

- c. To highlight the responsibilities and relationships among the shore activities and Fleet units in achieving and maintaining the maximum level of surface ammunition support required by the naval forces, ashore and afloat; and

- d. To provide reference, where appropriate, to official publications and detailed documents concerning subject matter areas.

This volume is broadly focused and presents an overview of the significant management processes and functional areas applicable to surface ammunition. As such, it is not intended to take the place of current instructions, but to provide a general understanding and reference based on these authoritative sources.

1.1.3 Background.

1.1.3.1 Authority. This Surface Ammunition Management volume is published and distributed by direction and authority of the Naval Sea Systems Command (COMNAVSEASYS COM) Conventional Ammunition Program Office under its assigned responsibilities for program management of 2T surface ammunition.

1.1.3.2 The development of this volume has proceeded from guidance addressing the management of surface ammunition being dispersed in a wide and diversified array of instructions, technical directives, handbooks, correspondence, and other documents. Guidance has emanated from numerous sources and levels within the surface ammunition community and is usually concerned with distinct and specialized functional areas of surface ammunition management without reference to its impact on the overall logistic support process. By gathering these dispersed statements of policy and procedures and integrating them within a single publication, it is intended to present herein the diversified world of surface ammunition in a manner that relates its parts to the whole. Attention has been directed, where appropriate, to functional areas where specific written guidance is not available.

1.1.3.3 Subject Areas. The subject areas addressed in the narrative are functionally organized and arranged to ensure continuity and facilitate ready reference. The coverage ranges from the point of higher command providing guidance and direction, through Systems Command implementa-

tion of guidance and each supporting activity's responsibilities and execution, to implementation by the Fleet. At each level, the directives, responsibility assignments, and the chronology of the procedural steps are indicated.

1.1.4 Terminology. This volume primarily addresses surface ammunition specifically identified by Cog symbol "2T" (except underwater mine components and some countermeasures) and subject to the program management of the NAVSEA Conventional Ammunition Program Office and the inventory management of the Naval Ammunition Logistics Center (NAVAMMOLOGCEN). Where policies and procedures are not Cog-specific, the material contained in this volume may be used to understand the management of other non-nuclear ordnance items. Each ordnance Cog is defined in NAVSUP P-724. (NOTAL). Although references provided for portions of this volume are the same references for the other ordnance Cogs, specific directions contained in this volume cannot be applied as authoritative to management of other ordnance. To assist in determining if the guidance provided is specific to surface ammunition or is generic to non-nuclear ordnance, the following terms derived from the Department of Defense (DoD) Dictionary will be used throughout this volume (except when included in a published name/title).

a. **Non-nuclear Ordnance.** All munitions containing non-nuclear explosives, and biological and chemical agents. This includes bombs, and non-nuclear warheads; guided missiles, and ballistic missile components; artillery, mortar, rocket, and small arms ammunition; all mines, torpedoes, and depth charges; demolition charges; pyrotechnics; clusters and dispensers; cartridge and propellant actuated devices; electro-explosive devices; clandestine and improvised explosive devices; and all similar or related items or components. Any time the term Ordnance is used it is referring to Non-nuclear Ordnance.

a. **Ammunition.** Non-nuclear ordnance Cogs (2E, 2T, and OT) assigned to the (SMCA) that are charged with non-nuclear explosives, propellants, pyrotechnics, initiating composition, biological, or chemical material for use in military operations, including demolitions; and all similar or related items or components. Certain suitably modified ammunition can be used for training, ceremonial, or nonoperational purposes.

b. **Weapons.** Non-nuclear ordnance Cogs (all others) not assigned to the (SMCA) that are charged with non-nuclear explosives, propellants, pyrotechnics, initiating composition, biological, or chemical material for use in military operations, including demolitions; and all similar or related items or components. Certain suitably modified weapons

can be used for training, ceremonial, or nonoperational purposes.

1.1.5 Scope. This volume is designed to support Chief of Naval Operations (CNO) readiness objectives by ensuring timely and effective Fleet logistics support. It describes the standard operating policies and procedures for program, acquisition, in-service, maintenance, inventory, and demilitarization/disposal management; logistics management support; security assistance program; and training functions. This volume applies to all Navy and Marine Corps activities concerned with naval surface ammunition and associated equipment. The following types of surface ammunition are covered:

a. **2T Cog Ammunition.**

- (1) Ship gun ammunition.
- (2) Small arms and Landing Party ammunition.
- (3) Pyrotechnics and Demolition materials.
- (4) Surface screening and marking devices.
- (5) Cartridges and cartridge actuated devices.

(6) Surface electronic warfare expendable countermeasures, including infrared decoy flares, chaff countermeasures, and active expendable decoys.

b. **Ammunition and logistics support equipment** associated with the above listed 2T Cog ammunition.

1.1.6 Policy

1.1.6.1 CNO provides the basis for this volume and sets policy for the assignment of management responsibilities to all activities of the naval establishment concerned with the acquisition, maintenance, inventory, logistics support, ordemilitarization/disposal of surface ammunition and equipment.

1.1.6.2 **Program Office.** The NAVSEA Conventional Ammunition Program Office, a subordinate to the Program Executive Officer for Surface Combatants-Aegis Program (PEO SC-AP), is assigned the Program Manager (PM) responsibilities for surface ammunition (2T Cog) by NAVSEAINST 5400.1 (NOTAL). As such, they assign specific responsibilities and provide policy to supporting activities concerned with the acquisition and maintenance of surface ammunition and equipment, and demilitarization/disposal of all Navy ordnance.

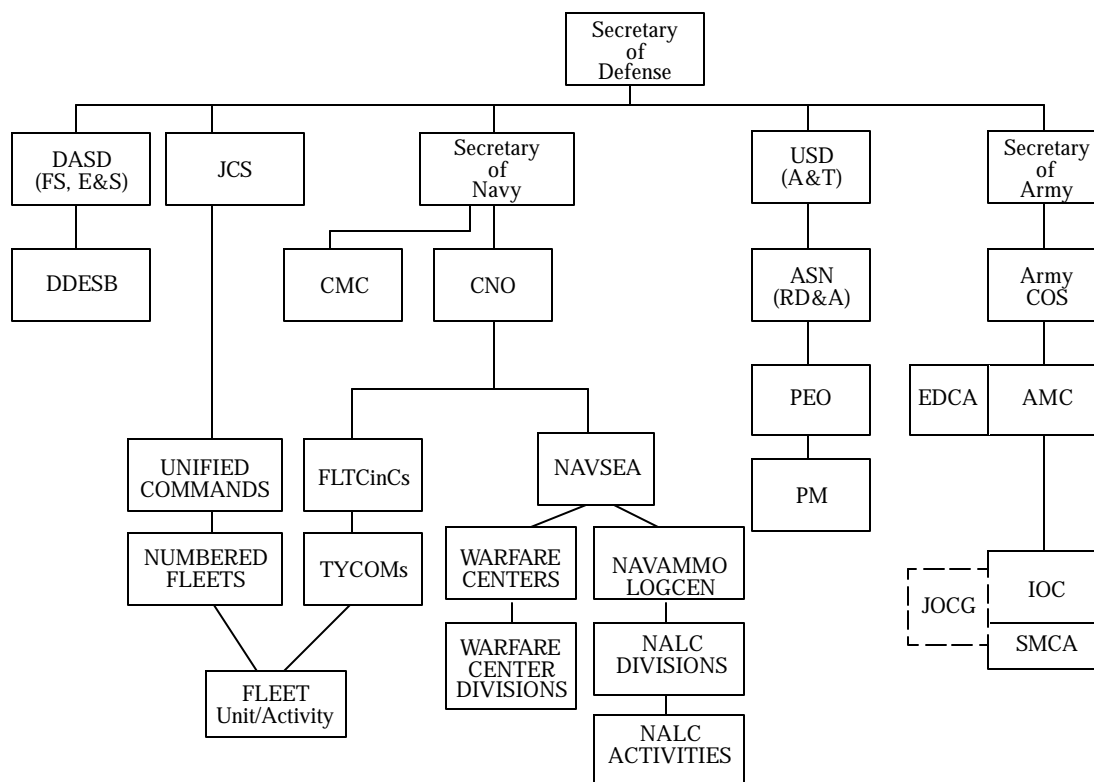
1.1.6.3 **Fleet Support.** The NAVAMMOLOGCEN (NALC) is assigned responsibilities for Ordnance Fleet Sup-

port by NAVSEAINST 5450.72 (NOTAL). As such, they assign specific responsibilities and provide policy to activities concerned with the inventory management, maintenance support, ordnance information systems, and logistics support of non-nuclear ordnance and equipment.

1.1.6.4 Lifecycle Management. The relationship between the PM and NAVAMMOLOGCEN for life cycle management of 2T surface ammunition is defined in the Memorandum of Agreement contained in the Naval Surface Warfare

Center Division (NSWCDIV) Crane letter dated 13 February 1995 (NOTAL).

1.1.7 Command Relationships. Figure 1-1-1 depicts the chain of command relationships of the commands and activities involved in the processes of surface ammunition management. As each management area is explained in the following sections, the commands involved will be identified and their responsibilities listed.



Notes:

AMC	Army Material Command
Army COS	Army Chief of Staff
ASN (RD&A)	Assistant Secretary of the Navy for Research, Development and Acquisition
CMC	Commandant of the Marine Corps
CNO	Chief of Naval Operations
DASD (FS, E&S)	Deputy Assistant Secretary of Defense (Family Support, Education and Safety)
DDESB	Department of Defense Explosive Safety Board
EDCA	Executive Director for Conventional Ammunition
FLT[CinCs]	Fleet Commanders in Chief
IOC	Industrial Operations Command
JCS	Joints Chiefs of Staff
JO CG	Joint Ordnance Commanders Group
NAVAMMOLOGCEN (NALC)	Naval Ammunition Logistics Center
NAVSEA	Naval Sea Systems Command
PEO	Program Executive Officer
PM	Program Manager
SMCA	Single Manager for Conventional Ammunition

Figure 1-1-1. Command Relationships.

CHAPTER 1.2

Department of Defense Interfaces

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CHAPTER 1.2

Department of Defense Interfaces

1.2.1 General. To fully understand how the Navy manages surface ammunition, an understanding of certain groups and organizations which have been formed at the DoD level must be undertaken. This chapter will identify those groups and organizations and explain their role in ammunition management.

1.2.2 The Single Manager for Conventional Ammunition.

1.2.2.1 Background. The origin of the Single Manager concept was the perceived need to achieve significant economies by consolidating duplicative management within the supply systems of the Military Services. Each Service independently procured, stocked, and disposed of common support items (nuts, bolts, grommets, screws, electrical parts, etc.), as well as the more sophisticated and expensive commonly used items. Duplication of functions also extended to principal items, such as non-nuclear ordnance. The problem of duplicate item management became even more pronounced as items increased in number and complexity. Long-standing conditions of item dispersal and maldistribution, multiple procurements, lack of standardization, and poorly coordinated production base planning, among other things, highlighted the need to place such items under a single manager organization. An all-out effort toward centralization was initiated and the first Single Manager for commonly used consumable items emerged in 1962. This was the Defense Supply Agency (DSA) and its network of commodity-oriented support centers. DSA became the Defense Logistics Agency (DLA) in 1977. To streamline ordnance management, DoD 5160.65-M of April 1989 (NOTAL) designating the Secretary of the Army as the SMCA. Today's objectives include the following.

a. Achieve the highest possible degree of efficiency and effectiveness in the DoD operations. This is required to acquire top quality ordnance to U.S. forces during peacetime and mobilization.

b. Integrate the wholesale ordnance logistics functions of the Military Services to the maximum extent practicable. This would eliminate unwarranted overlap and duplication and increase the efficiency and effectiveness of the overall DoD ordnance program.

c. Maintain an integrated production and logistics base to meet peacetime, surge, and mobilization requirements for assigned ordnance.

1.2.2.2 Charter. The Charter of the SMCA, initially issued on 14 August 1981, officially declared its mission as "to manage DoD conventional ammunition acquisition (including production, production base, and procurement), logistics (including distribution, transportation, storage, maintenance, renovation, demilitarization, and disposal), and financial management functions as prescribed in DoD 5160.65-M." The establishment of the SMCA constituted a major policy change having a broad impact throughout the ordnance communities. Significant logistics functions for assigned ordnance items were wholly or in part transferred to the SMCA. In broad terms, DoD 5160.65-M stated that for wholesale inventories, the Single Manager would do the following.

a. Assume cognizance of each assigned ordnance item used by a Military Service regardless of manner of acquisition.

b. Maintain records for each assigned ordnance item of supply.

c. Maintain the centralized inventory record of all assigned ordnance in the wholesale Continental U.S. (CONUS) supply system.

d. Channel the flow of assigned ordnance into and through the wholesale distribution system.

1.2.2.3 SMCA-Assigned Ammunition. Ammunition items assigned to the SMCA include: small arms, mortar, automatic cannon, artillery and ship gun ammunition; bombs; unguided rockets, projectiles, and submunitions; chemical ammunition; land mines; demolition material; grenades; flares and pyrotechnics; all component items such as explosives, propellants, and fillers; and related containers, packing and packaging materials.

1.2.2.4 Service-Assigned Weapons. Certain ordnance items are specifically excluded from the SMCA assignment and are retained for Service management. The non-SMCA items are: guided projectiles, rockets, missiles, and submunitions; naval mines, torpedoes, depth charges; nu-

clear weapons; cartridge and propellant actuated devices; chaff and chaff dispensers; guidance kits for bombs and other ammunition; swimmer weapons; explosive ordnance disposal tools and equipment; and their related ordnance containers, packing and packaging materials.

1.2.2.5 SMCA Responsibilities. As currently organized, the Commanding General (CG) U.S. Army Materiel Command (AMC) is assigned the execution of the SMCA mission. The Commanding General AMC has assigned the mission for managing and directing the program to the Executive Director for Conventional Ammunition (EDCA). The CG, Industrial Operations Command (IOC) is delegated the responsibility for the conduct of field operations. The EDCA oversees and advises the IOC in the conduct of SMCA's activities. Field activities supporting the SMCA consist of Ammunition Arsenals, Activities, Depots, and Plants under the control of the IOC.

1.2.2.6 Deputy Chief of Staff (DCS) for SMCA. The DCS for SMCA is responsible to the CG, IOC for execution and management of the SMCA mission for ammunition product line, supply, storage, maintenance, demilitarization, Conventional Ammunition Working Capital Fund (CAWCF) financial management, ammunition systems and customer support. The DCS for SMCA has the following responsibilities for the execution of SMCA operations.

a. Act as principle advisor to the CG for all matters pertaining to ammunition supply, maintenance, transportation, customer support, SMCA management, and to ensure execution of the Command ammunition mission.

b. Coordinate actions for the execution of the SMCA program with all subordinate organizations.

c. Act as ammunition management and transportation management career PM for the IOC.

d. Monitor the progress of critical and high priority armament programs to assure an orderly and timely transfer of procurement and production programs to assure uninterrupted support to the field.

e. Serve as the IOC focal point for the Security Assistance Program (SAP) for selected countries/ international organizations.

f. Intensively manage, plan, schedule, direct, coordinate, monitor, and control all Foreign Military Sales (FMS) ammunition programs.

1.2.2.7 SMCA Navy Liaison Office (NVLNO). The DCS for SMCA is supported by Joint Service liaison of-

fices staffed by U.S. Air Force, U.S. Marine Corps, and U.S. Navy officer and enlisted personnel. It is the on-site Navy representative for ammunition and weapons material. The NVLNO is the principal point of contact for all Navy activities, Fleet and shore-based, for oversight and issue resolution with the IOC. It is also the principal support office in assisting the IOC in communicating with and resolving issues concerning Navy activities dealing with the SMCA. The NVLNO is responsible for the following.

a. Participating in Joint Conventional Ammunition Program (JCAP) and SMCA policy formulation and directives, instruction, and manual development. Providing liaison for action by Navy representatives to the various JCAP/SMCA action groups. Attending JCAP/SMCA meetings as necessary to comment on and track changes in SMCA operating policies and procedures. This includes the following.

(1) Acting as the focal point between the IOC and Naval Ammunition Logistics center (NAVAMMOLOG-CEN) on the development and implementation of Joint Service Support Agreements.

(2) Ensuring provision of Navy representatives for all Joint Committees and Groups operating under or in support of SMCA operations.

b. Monitoring, planning, budgeting, and executing Navy requirements by the IOC/SMCA and facilitating the solution to any problems thereto. This includes the following.

(1) Ensuring provision of planning data as necessary from Navy PEOs, PMs, and Research and Development (R&D)/Production activities for acquisition, maintenance, storage, and disposal of non-nuclear ordnance and related components.

(2) Ensuring provision of Navy Technical Documentation required to support the acquisition, maintenance, and disposal of non-nuclear ordnance and related components.

(3) Ensuring provision of Navy Military Interdepartmental Purchase Requests (MIPRs) as required to implement planned or unplanned procurements or maintenance actions.

(4) Monitoring receipt and processing of Navy funding for acquisition and maintenance functions to be performed by the IOC.

c. Acting as the IOC on-site Navy representative on all matters in the development, facilitation, moderniza-

tion, procurement, production, distribution, maintenance, and demilitarization of non-nuclear ordnance which impact the Navy. This includes the following.

(1) Attending and/or reviewing Break-out and Make or Buy Committee meetings to ensure decisions are consistent with the Navy Technical Documentation provided.

(2) Monitoring procurement actions to ensure ordnance items can be provided within the specified required timeframes.

(3) Assisting IOC personnel in resolution of technical, production, or quality problems involving the production, maintenance, or disposal of Navy- owned or designed ordnance.

(4) Participating in or reviewing results of Contractor Performance Certification Program visits to ensure quality and technical conformance of material acquired for Navy use.

(5) Tracking monthly status of all Navy items being processed by the IOC and advising the appropriate Navy agency of any problems or delays. Interceding as required to ensure resolution of issues to Navy activities' satisfaction.

(6) Monitoring and providing comments/recommendations to Navy PEO/PMs and SMCA personnel concerning planning for transition of Navy developed items to the SMCA for full-scale production.

(7) Reviewing Justification and Approval (J&A) for Sole Source Procurement of ordnance items and providing Navy concurrence/non-concurrence after consultation, if required, with Navy PEO/PMs.

(8) Reviewing Conventional Ammunition Working Capital Fund (CAWCF) pricing and billing to ensure correct utilization of Technical Documentation and apportionment of costs and expenses.

(9) When requested, representing PEO/PMs in meetings with IOC personnel for problem resolution or issue definition.

d. Representing the Navy in all IOC/SMCA allocation actions affecting Navy items. Provides the interface with Navy customers of the SMCA to identify requirements for both Surge Planning and Industrial Preparedness Planning (IPP). This includes the following.

(1) Monitoring actual versus planned delivery of ammunition into the Navy inventory and ensuring provision of revised delivery requirements when necessary.

(2) Ensuring provision of Surge and IPP requirements and documentation for Navy ordnance and reviewing SMCA Surge/IPP plans for adequacy in meeting Navy requirements. Advising requiring activity of any shortfalls or problems.

e. Ensuring Navy activities are informed of SMCA responsibilities concerning protection of the production base in cases of co-production and licensed production. Monitoring all Navy co-production/licensed production decisions involving IOC produced items assuring that decisions are in accordance with previous production base policy decisions.

f. Attending/reviewing IOC Configuration Control Board (CCB) meetings to ensure Navy configuration managers agree to all changes/denials involving Navy technical documentation and resultant financial impact prior to implementation. For items under Army configuration managers, ensuring appropriate Navy activities review changes, waivers and deviations and providing Navy approval/comment where appropriate.

g. Coordinating, planning, and executing Joint Service exercises involving IOC/SMCA and Navy activities.

h. Maintaining liaison for problem resolution with U.S. Navy storage activities regarding pending and actual shipments of Navy material from or to Army activities. Coordinating priority movement of ordnance items when requested by Navy inventory or program managers. Monitoring and providing recommendations on all requests for disposition of Navy material.

i. Assisting IOC personnel in the establishment of and monitoring Electronic Data Transfer of information between the IOC and Navy activities and organizations.

1.2.3 Executive Director for Conventional Ammunition (EDCA).

1.2.3.1 Charter. The charter of 14 August 1981 governing the SMCA states that, "The Commanding General, DARCOM (now AMC), will designate an Executive Director for Conventional Ammunition for performance of the activities prescribed herein (the Charter), and with power to carry out the authority delegated to the Commanding General, DARCOM." To ensure timely and effective direction and the interchange of information, EDCA is authorized direct communication to all interfacing and par-

ticipating organizations involved in the SMCA mission, functions, plans, and programs. EDCA has the following responsibilities for the execution of SMCA operations.

- a. Act as the executive agent for all SMCA operations.
- b. Operate a direct channel with the DoD Components in the National Capital Region (NCR) (logistics commands and higher levels) for communication, coordination, collaboration, and support.
- c. Develop coordinated plans to accomplish established goals, and implement objectives and initiatives.
- d. Work with the DoD Components in the NCR to resolve issues arising from interpretations of DoDD 5160.65 of 08 March 1995 (NOTAL), DoD 5160.65-M, related implementing documents, and other aspects of SMCA operations that cannot be resolved at the operating command level.
- e. Develop a basis for planning, executing, controlling, and measuring qualitative and quantitative accomplishments.
- f. Submit an annual report on execution of the SMCA mission, with particular emphasis on measurable accomplishments, problem areas, and required actions.

1.2.3.2 Resource Control. EDCA exercises resource control by ensuring that dollar and manpower resource requirements are developed and submitted in accordance with AMC manpower/funding for inclusion in the Program Analysis Resources Review for applicable target program years.

1.2.3.3 National Capital Region Support. EDCA is supported by a Joint Service staff of senior ordnance specialists located in the NCR.

1.2.4 Joint Ordnance Commanders Group (JOCG).

1.2.4.1 Charter. The JOCG was chartered by the Joint Logistics Commanders (JLC) to achieve joint action on SMCA and non-SMCA programs and activities. This group is authorized to coordinate all non-nuclear ordnance logistics programs and activities within the authority delegated to the Service representatives. The JOCG is the approval authority for all Joint Conventional Ammunition Policies and Procedures (JCAPP) governing interService functional relationships.

1.2.4.2 Objectives. The following objectives serve as a guide to JOCG activities.

- a. Develop uniform and, to the extent practicable, standard non-nuclear ordnance policies and procedures for implementing the SMCA mission and functions, as well as the ordnance missions and functions retained by the Military Services.
- b. Maintain effective, continuing coordination and integration of joint non-nuclear ordnance efforts.
- c. Promote efficiency, effectiveness, and economy in ordnance programs and activities.
- d. Promote improvements in the ordnance management decision-making process.
- e. To accomplish its objectives the JOCG does the following.
 - (1) Maintains an organizational structure with multi Service participation to carry out its mission.
 - (2) Approves joint non-nuclear ordnance policies and procedures developed by JOCG organizations.
 - (3) Provides policy direction.
 - (4) Approves the annual program plan for JOCG organizations.
 - (5) Approves studies and reports developed by JOCG organizations and, as appropriate, directs or recommends implementing actions.

1.2.4.3 Membership. The JOCG members are the commanders or their designated representatives of the following.

- a. The U.S. Army IOC.
- b. AMC (DCS for Ammunition).
- c. CNO (N41).
- d. NAVAMMOLOGCEN.
- e. AFMC (Director of Requirements).
- f. MARCORSYSCOM (AM).

1.2.4.4 Organizational Structure. The organizational structure of the JOCG including subgroups and ad hoc

groups is shown in figure 1-2-1. Navy organizational relationships to these subgroups will be shown in the organizational relationship charts in each section of this volume.

1.2.5 Department of Defense Explosive Safety Board (DDESB).

1.2.5.1 Background. The U.S. Congress appointed a joint Army-Navy Ammunition Storage Board by the First Deficiency Act of December 22, 1927. The Board was directed to survey the storage of Army and Navy supplies of non-nuclear ordnance and components. There was a special reference to those supplies located near populated communities and industrial areas that could constitute a menace to life and property. As the basic standards of safety, the Board adopted the laws of the State of New Jersey that incorporate the American Table of Distances. When these laws were insufficient, the Board adopted safety standards developed independently by the Army and the Navy. The survey results were submitted to Congress in a report dated March 3, 1928. Congress ordered the report printed on March 12, 1928, as House of Representatives Document (H. Doc.) No. 199, 70th Congress. The Second Deficiency Act of May 29, 1928, approved the Board's report and appropriated funds for the correction of deficiencies that presented hazards at various locations. In addition, Congress established the Joint Army-Navy Ammunition Storage Board as a permanent organization to keep the Secretaries of the Army and Navy advised of non-nuclear ordnance storage and to prevent hazardous conditions associated with this storage from endangering life and property inside as well as outside of the storage reservations. After creation of the Department of Defense, the Board was renamed the Army-Navy Explosives Safety

Board and it became the Armed Services Explosives Safety Board. With inclusion of the Defense Agencies within the Board's scope, it has been designated the Department of Defense Explosive Safety Board, its present name.

1.2.5.2 Purpose. The purpose of the DDESB is to establish and recommend safety standards. These standards are designed to prevent or correct hazardous conditions associated with non-nuclear ordnance and explosives manufacture, test, handling, rework, transportation, storage, and disposal. These safety standards are the basis for Navy safety policy. However, Navy and Marine Corps activities shall operate under the criteria of this document, OPNAV instructions addressing explosives safety, and NAVSEA OP 4 and OP 5 volumes 1 and 3.

1.2.5.3 Authority. The jurisdiction of the DDESB extends to facilities where explosives are manufactured, tested, handled, reworked, transported, stored, or disposed of. These facilities may be Army, Navy, Marine Corps, and Air Force. They may be within the United States, its territories and possessions, or within areas where the United States has long-term rights or as specifically designated by the Secretaries of the Military Departments in areas occupied by the armed forces.

1.2.5.4 Responsibilities. The following are responsibilities of the DDESB that have been developed under the policy direction and program guidance of the Deputy Assistant Secretary of Defense (Family Support, Education and Safety) (DASD (FS,E&S)) and in agreement with other DoD policies and directives. DDESB responsibilities excerpted from DoDD 6055.9 of 29 July 1996 (NOTAL) include the following.

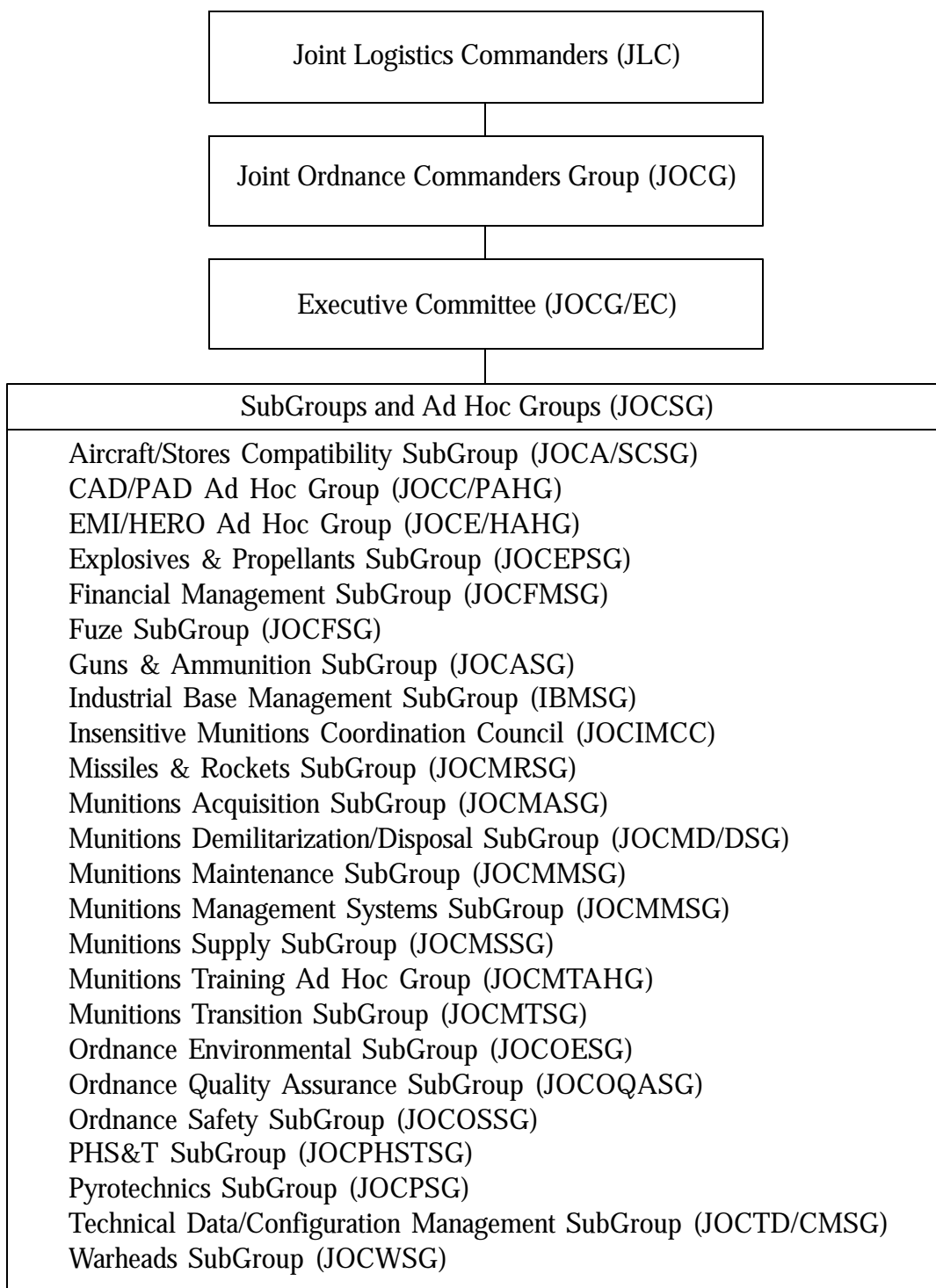


Figure 1-2-1. JOCG Organizational Structure.

a. Providing impartial and objective advice to the Secretary of Defense, the Secretaries of the Military Departments, and the Directors of Defense Agencies. This advice concerns ordnance and explosives manufacturing, testing, handling, reworking, disposal, transportation, storage, and siting with special attention to preventing conditions that will endanger life and property inside and outside DoD activities.

b. Recommending DoD-wide safety standards designed to prevent or correct hazardous conditions associated with ordnance and explosives to the Department of Defense Explosive Safety Board (DASD) Family Support, Education and Safety (FS, E&S) or designated representative for approval and publication.

c. Establishing, with the assistance of the DoD Components, joint regulations for explosives hazard classification procedures and arbitrating or otherwise resolving differences among DoD Components on reassigning appropriate hazard classifications.

d. Maintaining a liaison with other Government Departments, Allied Governments, and industrial organizations that have mutual interests or responsibilities in safety matters involving ordnance and explosives.

e. Keeping DoD Components informed about safety problems relating to ordnance and explosives development, manufacture, testing, handling, transportation, storage, maintenance, rework, salvage, and disposal.

f. Surveying, studying and evaluating activities to determine compliance with ordnance and explosives safety standards and detecting conditions that could result in loss of life or undue damage to property inside and outside DoD activities.

g. Reviewing and analyzing reports, data, and information from all sources where ordnance and explosives hazards, accidents, and safety, except nuclear, are involved. Making appropriate recommendations to proper authorities for establishing revisions of standards and procedures.

h. Reviewing and approving, with respect to safety considerations, all general site plans for construction or modification of fixed or movable ordnance and explosives facilities and sites and facilities in proximity to or affected by these ordnance and explosives facilities and sites. Giving impartial and objective advice to the DoD Components that are involved in the safety of these facilities and sites.

i. Preparing programs of investigation, research, study, and tests concerning non-nuclear ordnance and explosives hazards that are required to develop and maintain safety standards. Executing the portions of these programs that are approved by the Office of the Secretary of Defense.

j. Performing other duties that may be assigned by the DASD (FS, E&S) or designated representative.

1.2.5.5 DDESB Inspections. The DDESB inspects, on an annual or biennial basis, military shore activities that are involved in any way with handling, processing, or storing of explosives. Normally, the commanding officer of an activity is notified in writing by the DDESB from 2 to 4 weeks prior to the scheduled time of inspection. The responsibilities of activities with respect to these inspections are described in OPNAVINST 8020.14 (NOTAL) and are briefly described in the following.

a. When advised of a forthcoming DDESB inspection, the commanding officer of an activity shall make arrangements for all necessary assistance to DDESB inspection personnel. Arrangements will include providing station maps, population data, and non-nuclear ordnance handling and storage data. Station maps will include a copy of the general development map for the activity, appropriately marked with explosive safety distance areas.

b. The DDESB inspection personnel shall be given complete cooperation in the performance of their duties.

c. The commanding officer shall be present, or be represented, at the inspection debriefing.

d. Immediate action shall be taken to correct obvious and readily correctable violations of existing regulations and directives that have been detected by DDESB inspection personnel. Action shall be taken to terminate operations identified as unacceptable hazards and immediately report issues and circumstances to the appropriate chain of command and the CNO. Action on all other recommendations shall be held in abeyance pending review and approval, through the chain of command, by CNO.

e. The activity inspected shall submit a brief to the CNO indicating the explosive safety deficiencies that were highlighted during the inspection debrief, a list of recommendations made by the DDESB inspection personnel, and whether local corrective action was or shall be taken. A copy of the inspector's preliminary report, with activity comments, will satisfy this requirement. The brief should also indicate what information was furnished to the inspectors during the inspection. This brief

shall be forwarded by regular mail within 7 working days after the completion of the inspection. A copy of the brief shall be forwarded to the Commander, NAVAMMOLOG-CEN, to the Command having management control of the activity, and to the appropriate area coordinator.

1.2.5.6 DDESB Correspondence. Navy and Marine Corps activities/commands shall not correspond directly with the DDESB. Required correspondence shall be forwarded via the activity's chain of command, NAVAMMOLOGCEN, and CNO.

CHAPTER 1.3

Management Information System Links

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CHAPTER 1.3

Management Information System Links

1.3.1 Conventional Ammunition Integrated Management System (CAIMS) Architecture.

1.3.1.1 General. The intent of CAIMS is to establish a single point of reference within the Navy for information regarding the world-wide status of Navy ordnance. This includes requirements, assets, production, expenditure, cost, and technical inventory management data, regardless of inventory management or ownership responsibilities. CAIMS supports Inventory Managers (IMs), PMs, Fleet and their Type Commanders, and many other users. The system responds to requirements, malfunctions, asset and readiness postures, and other necessary functions of a real-time supply system. CAIMS maintains a large-scale random-access database capable of responding to a variety of requests for information.

1.3.1.2 Major Applications. The system contains the nine major applications shown in figure 1-3-1. These nine major applications include 23 individual operations, which, in many cases, perform functions required by other supply systems that provide data to higher management within DoD.

1.3.1.3 Network System. The CAIMS shared data base has a network of secure terminals cleared through CONFIDENTIAL. This network links terminals and printers in a geographic distribution across the continental United States and at selected locations overseas. The system is designed to operate on an IBM 3090-300E computer system, located at Mechanicsburg, PA. In contingencies, the data base is portable to other Navy Inventory Control Point computers.

1.3.1.4 Software and Hardware Management. CAIMS was developed by what is now called NAVAMMOLOGCEN. NAVAMMOLOGCEN is the CAIMS PM. The soft-

ware and hardware for CAIMS are maintained by the Fleet Material Support Office (FMSO) co-located with NAVAMMOLOGCEN at Mechanicsburg, PA.

1.3.2 Conventional Ammunition Integrated Management System Links. CAIMS, as the central, single-point reference for Navy ordnance, is the major automated system linking all of the other automated systems being used by the Navy for ordnance management functions. The other automated systems and their type of link to CAIMS is identified in figure 1-3-2. A description of each of the other automated systems identified in figure 1-3-2 can be found in the appropriate section of this manual. The type of link between CAIMS and the other systems varies but there are three basic types of links.

a. The first type is used by the remote terminals connected to the CAIMS computer. These terminals are IBM compatible Personal Computers (PCs) with a Class B and Tempest rating. These PCs act as dumb terminals using 3270 protocol and are linked by a dedicated secure phone line.

b. The second type is used by reporting activities which link with CAIMS by transmission of data from the local communications centers through the Defense Automatic Addressing System (DAAS). DAAS simply acts as a communications traffic cop for Ammunition Transaction Reports (ATRs), directing the ATRs to their appropriate destination(s). DAAS receives other ordnance data (i.e. requisitions), processes them, and then forwards them to the appropriate destination(s).

c. The third type is used by a variety of other automated systems which simply share data or transfer data by means of forms generated by one of the systems or manually. The data is then entered by data entry personnel into the other system.

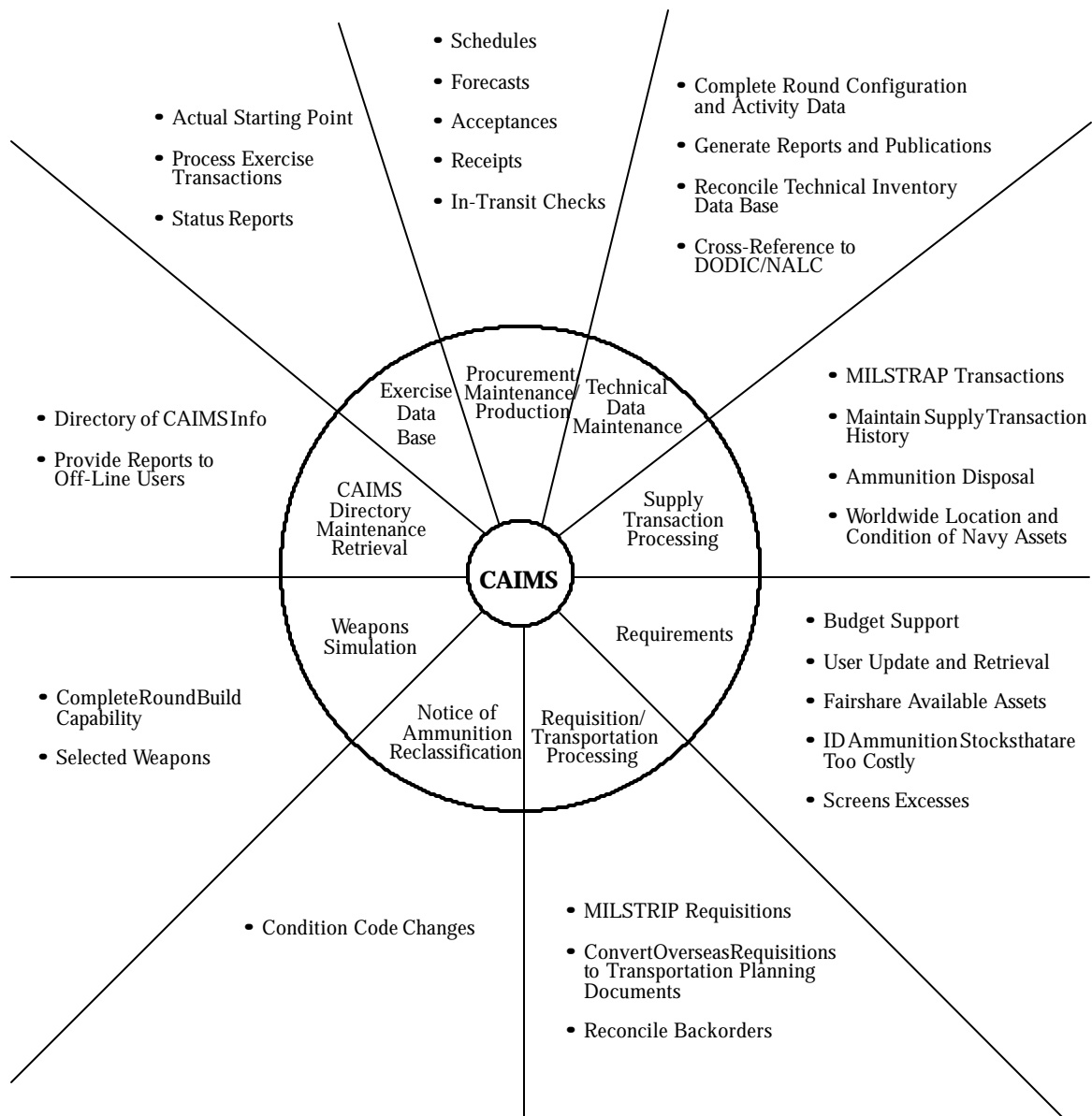


Figure 1-3-1. CAIMS Architecture.

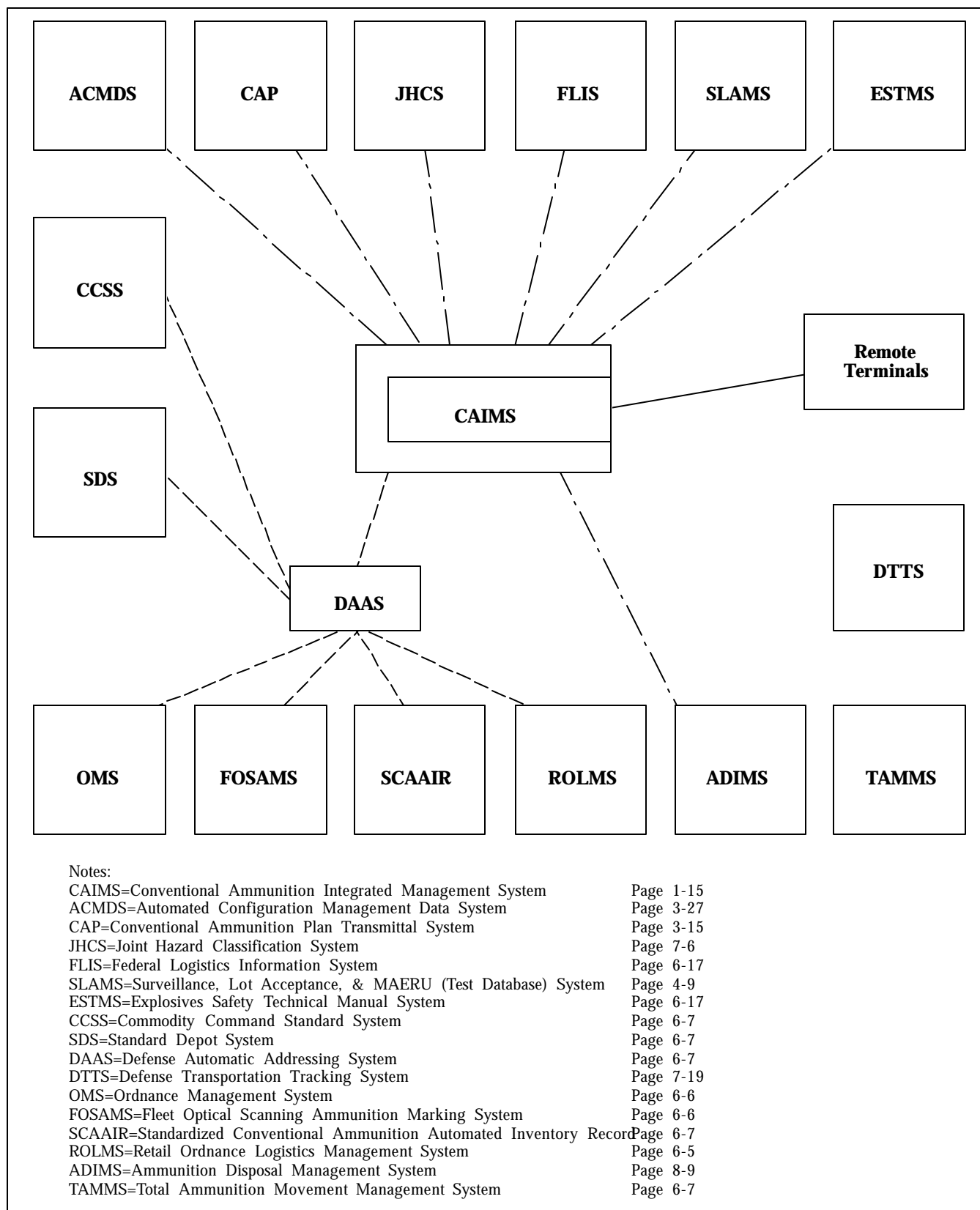


Figure 1-3-2. CAIMS Links.

SECTION 2

Program Management

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CHAPTER 2.1

General

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CHAPTER 2.1

General

2.1.1 Perspective. The primary focus of program management is to define a balanced program of acquisition, maintenance, and expenditure for each assigned ammunition item. The personnel responsible for program management is responsible for supporting the defined program through the levels of budget reviews resulting in annual Congressional authorization and appropriation acts.

2.1.1.1 Program Issues. Many issues are faced by those responsible for program management, some of which are outside their scope of control. The defined program must be continually adjusted from year to year to compensate for these external issues. The biggest issues faced on a recurring basis include the following.

a. **Undefined Budget Cuts.** A program's share of an undefined budget cut passed down from the Navy's comptroller must be absorbed and changes made to the defined program in the out years to make up for the cut.

b. **Congressional Budget Changes.** A program is often changed by Congressional action for reasons other than those used to determine program requirements. Programs must be adjusted to account for these pluses or minuses, or shifts from one part of the program to another.

c. **Production Problems.** Funds budgeted for procurement of an item which is in production and experiencing problems affecting the delivery schedule, are usually cut or deferred to later years during the budget review process. The managers get the opportunity to reclaim these cuts or deferments. If they are not successful in getting the funds restored, they must adjust their defined program accordingly.

2.1.1.2 Issue Impact. These issues listed above, and many more which happen on occasion, greatly impact the PM's ability to prudently manage the assigned program. The impact of these changes is often the inability to achieve or maintain a defined inventory objective to support Fleet requirements.

2.1.2 Public Laws. Some new laws and requirements have been passed by the U.S. Congress affecting ac-

counting and financial management practices. The following Acts have a direct bearing on the processes used in ordnance program management.

2.1.2.1 Federal Managers Financial Integrity Act of 1982 (FMFIA). The FMFIA requires that each Executive Agency conduct annual evaluations to determine the adequacy of its systems of internal accounting and administrative controls. This provides reasonable assurances of the following.

a. Obligations and costs are in compliance with applicable laws.

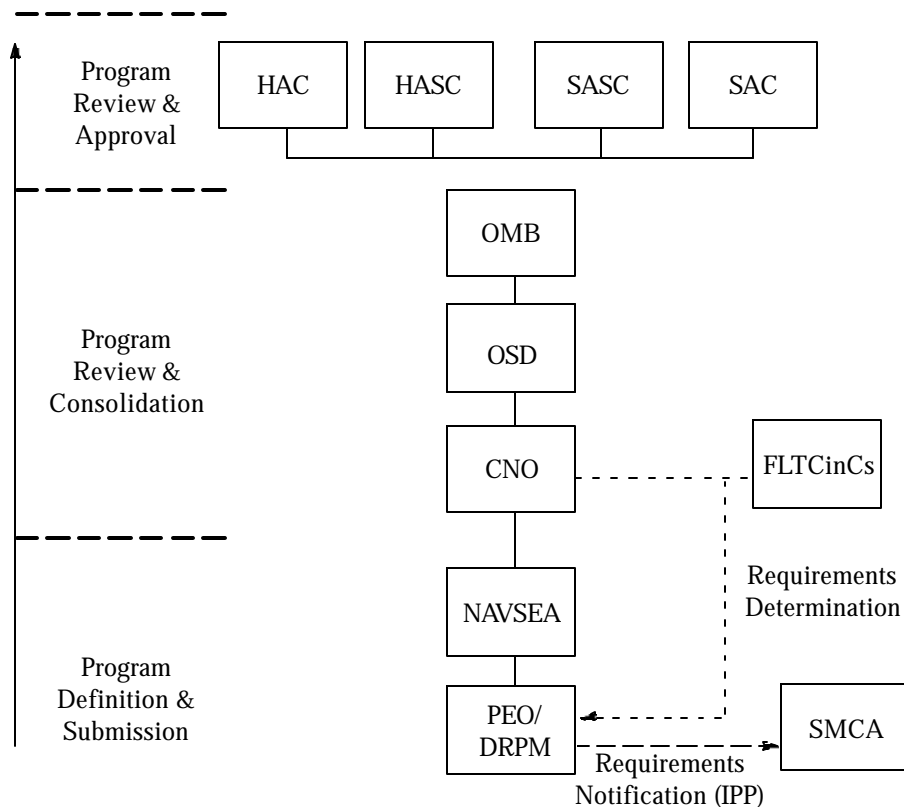
b. Funds, property, and other assets are safeguarded against waste, fraud, and mismanagement.

c. Methodology is established for identifying and correcting system weaknesses.

2.1.2.2 Chief Financial Officers Act of 1990 (CFO Act). The CFO Act focuses attention on the need for a strong financial management function. The Department of the Navy (DON) is required to prepare financial statements for its trust and revolving funds according to generally accepted accounting principles established by the Federal Accounting Standards Advisory Board.

2.1.2.3 Government Performance and Results Act of 1993 (GPRA). The GPRA requires the systematic identification of output and outcome measurement in budget formulation and management. It also requires Federal agencies to set performance goals and to relate those goals to budget requests and to actual results.

2.1.3 Organizational Relationships. The organizations involved in program management are somewhat static from year to year. However, many of the personnel involved in the funding chain processes in the Comptroller and Congressional offices have changed from year to year. This continual turnover of personnel provides a significant challenge to the PM. The PM must ensure that the surface ammunition programs are adequately defined to preclude changes during the review process, based on a lack of understanding. Figure 2-1-1 identifies the



Notes:

HAC= (Congressional) House Appropriations Committee
 HASC= (Congressional) House Armed Services Committee
 SAC= (Congressional) Senate Appropriations Committee
 SASC= (Congressional) Senate Armed Services Committee
 OMB= (Congressional) Office of Management and Budget
 OSD= Office of the Secretary of Defence
 CNO= Chief of Naval Operations
 FLTCinCs= Fleet Commanders in Chief
 NAVSEA= Naval Sea Systems Command
 PEO/DRPM=Program Executive Officer/Direct Reporting Program Manager
 SMCA= Single Manager for Conventional Ammunition

Figure 2-1-1. Program Management Organizational Relationships.

organizations involved in the program management processes and their relationship to each other. The following sections will describe the program management processes and identify the organizational responsibilities for those processes.

2.1.4 Types and Purposes of Appropriations. The Navy receives appropriations included in the DoD Appropriations Act. These appropriations are either annual, multiple year, or no-year. The language of each appropriation has evolved over the years to express precisely the purposes for which the funds are legally available, in accordance with the intent of Congress regarding the use of appropriated funds. Despite the wide variety of naval programs, the text for each appropriation is relatively brief. Such brevity is possible due to the statutory references to basic authorizing legislation and because of the cumulative history of legal interpretation of the words and phrases. The ordnance programs are programmed, budgeted, and executed within the structure of the following appropriations as defined by Congress. The appropriations involved in ordnance management include the following.

2.1.4.1 Research, Development, Test, and Evaluation, Navy (RDT&E,N). The DoD Appropriation Act provides language for the RDT&E,N appropriation as follows:

“For expenses necessary for basic and applied scientific research, development, test, and evaluation, including maintenance, rehabilitation, lease, and operation of facilities and equipment, as authorized by law; \$____, ...to remain available for obligation until September 30, 19__; provided, ...”

a. **Time Limitations.** The budget request submitted to Congress in each fiscal year under the RDT&E,N appropriation is for a multiple-year appropriation to remain available for obligation for 2 fiscal years. Each fiscal year appropriation enacted is separate and discrete. Following the period of availability for incurring new obligations, the account remains available for use for 5 years for effecting authorized obligation adjustments and payments. At the end of the 5-year period, the account is closed and any remaining outstanding obligations are canceled. Thereafter, bills presented for payment must be paid from the currently available appropriations for the purpose, subject to limitations in the current issue of NAVCOMPTINST 7040.37B (NOTAL).

b. **Funding Coverage.** Funding under the RDT&E,N appropriation is required for developing new ordnance items or components which are not currently in the programmed procurement plan.

2.1.4.2 Procurement, Ammunition Navy, Marine Corps (PAN-MC). The DoD Appropriation Act provides language for the PAN-MC appropriation commencing in FY 95 as follows:

“For construction, procurement, production, modification and modernization of ammunition, and related support equipment including spare parts, and accessories therefor; expansion of public and private plants, including the land necessary therefor, and such lands and interests therein, may be acquired, and construction prosecuted thereon prior to approval of title; and procurement and installation of equipment, appliances, and machine tools in public and private plants; reserve plant and Government and contractor-owned equipment layaway, as follows:....in all: \$____; to remain available for obligation until September 30, 19__: Provided,....”

a. **Time Limitations.**

(1) **Administrative.** Obligation targets are established for each program year starting with 1 October of each fiscal year, at the budget activity level. This limitation on the period of fund availability for obligation purposes is designed to accelerate obligation performance and reduce excessive carry-over of unobligated funds in accordance with the expressed desires of Congress.

(2) **Statutory.** The budget request submitted to Congress for each fiscal year under the PAN-MC appropriation is for a multiple-year appropriation to remain available for obligation for 3 fiscal years. Each fiscal year appropriation enacted is separate and discrete. Following the period of availability for incurring new obligations, the account remains available for use for 5 years for effecting authorized obligation adjustments and payments. At the end of the 5-year period, the account is closed and any remaining outstanding obligations are canceled. Thereafter, bills presented for payment must be paid from the currently available appropriation for the purpose, subject to limitations in NAVCOMPTINST 7040.37B (NOTAL).

b. **Funding Coverage.** Funding under the PAN-MC appropriation covers the following ammunition management areas.

- (1) Ammunition Procurement.
- (2) Related Support Equipment Procurement.
- (3) Acquisition Engineering.
- (4) Product Improvement Programs.

2.1.4.3 Weapons Procurement, Navy (WPN). The DoD Appropriation Act provides language for the WPN appropriation as follows:

"For construction, procurement, production, modification and modernization of missiles, torpedoes, other weapons, other ordnance and ammunition(only through FY94; starting in FY95 this transfers to PAN-MC), and related support equipment including spare parts, and accessories therefor; expansion of public and private plants, including the land necessary therefor, and such lands and interests therein, may be acquired, and construction prosecuted thereon prior to approval of title; and procurement and installation of equipment, appliances, and machine tools in public and private plants; reserve plant and Government and contractor-owned equipment layaway, as follows:.....in all: \$____; to remain available for obligation until September 30, 19__; Provided,..."

a. Time Limitations.

(1) Administrative. Obligation targets are established for each program year starting with 1 October of each fiscal year, at the budget activity level. This limitation on the period of fund availability for obligation purposes is designed to accelerate obligation performance and reduce excessive carry-over of unobligated funds in accordance with the expressed desires of Congress.

(2) Statutory. The budget request submitted to Congress for each fiscal year under the WPN appropriation is for a multiple-year appropriation to remain available for obligation for 3 fiscal years. Each fiscal year appropriation enacted is separate and discrete. Following the period of availability for incurring new obligations, the account remains available for use for 5 years for effecting authorized obligation adjustments and payments. At the end of the 5-year period, the account is closed and any remaining outstanding obligations are canceled. Thereafter, bills presented for payment must be paid from the currently available appropriation for the purpose, subject to limitations stated in the current issue of NAVCOMPINST 7040.37B (NOTAL).

b. Funding Coverage. Funding under the WPN appropriation covers the following ammunition management areas.

- (1) Weapons (Ammunition) Procurement.
- (2) Related Support Equipment Procurement.
- (3) Acquisition Engineering.
- (4) Product Improvement Programs.

2.1.4.4 Operation and Maintenance, Navy (O&MN) Appropriation. The DoD Appropriation Act provides language for the O&MN appropriation as follows:

"For expenses, not otherwise provided for, necessary for the operation and maintenance of the Navy and Marine Corps, as authorized by law; not to exceed \$____ can be used for emergencies and extraordinary expenses, to be expended on the approval or authority of the Secretary of the Navy, and payments may be made on his certificate of necessity for confidential military purposes." The O&MN appropriation is provided annually through legislation under to the provisions of 10 U.S. Code 138.

a. Limitations. Annual legislation is required to authorize DoD appropriations for the operation and maintenance of any armed force or the activities and agencies of the DoD. Funds may not be appropriated in any fiscal year for civilian personnel unless the end-strength for civilian personnel has been authorized by law. In addition, funds may not be appropriated in any fiscal year for training military personnel in categories specified in the NAVSO P-1000 (NOTAL) unless the average student load has been authorized by law.

b. Funding Coverage. Funding under the O&MN appropriation Budget Activity 7 covers the following ammunition management areas.

- (1) Ordnance In-Service Management.
- (2) Ordnance Inventory Management.
- (3) Ordnance Logistics Management Support.
- (4) Surface Wide Transportation (SWT).
- (5) Ordnance Disposal Management.
- (6) Training.

2.1.4.5 Reimbursable Budget. Various public laws and DoD policies establish the basis under which property, work, or services may be furnished by the Navy to other activities of the U.S. Government, the public, or foreign governments on a reimbursable basis. In execution of approved reimbursable budget programs, the reimbursements earned as the result of filling customer orders are derived from the performance of work or services, the procurement of material for others, or the sale of material from present inventories. Reimbursements from the sale of material from present inventories, accruing as revenue, may be used to replace the items sold if they are in short supply, or the revenue may be applied as free assets under established criteria to finance direct budget programs. In pro-

curement appropriations, the reimbursable budget program consists of those items of material sold from existing stocks or material purchased for customers, including work or services which are performed in connection with delivery thereof. The three types of reimbursable procurements follow.

a. Direct Citation Procurement. Direct citation procurement exists when the customer's accounting data is cited on contracts. A direct citation procurement transaction is not categorized as a reimbursable transaction.

b. Replacement.

(1) Replacement-in-Kind (RIK) Procurement. RIK procurement is procurement initiated to replace material sold to customers. It is DoD policy that RIK transactions are administered under the reimbursable budget program authority when procurement is classified as follows.

(a) Replacement procurement for quantities of identical items furnished to the customer from on-order quantities under an existing contract financed by direct program funds.

(b) Replacement procurement in identical kind for items sold to customers from inventory.

(c) Replacement procurement for secondary items, whether or not identical, is treated as a generic category requiring, by definition, "replacement-in-kind."

"Identical," as used in items (a) and (b), means the same basic model and series or mod designation; i.e., sale of and replacement procurement of a Mk 127 5"/54 HE-CVT projectile.

(2) Replacement Procurement. Replacement procurement is the acquisition of material items to replace those sold to customers, wherein the replacement item is not identical but accomplishes the same basic purpose. In such a situation, the reimbursement from the sale will be included under reimbursable financing, but the "buy-back" of the replacement must be accomplished under the direct budget program, consistent with the requirements for re-programming of funds.

(3) Unit Cost Less Than \$5,000. The replacement of items sold from inventory with a unit cost of less than \$5,000 will be treated as a RIK if an improved model of the same end item is being procured, it performs the same warfighting capability, and the inventory objective presented to Congress is not exceeded. Items satisfying all of these criteria will be financed with the reimbursable proceeds of the sale of the end items issued from inventory without processing a DD-1415 reprogramming action. The amount applied toward the RIK may not exceed the proceeds of the sale.

c. Free Assets. Free assets are the revenues derived from the sale of material which does not require replacement or will not be replaced. The free assets resulting from these sales would accrue under a reimbursable program. Free assets derived from FMS stock issues are required by law to be deposited to either miscellaneous receipts of the Treasury, 173041.1202, or to the Special Defense Acquisition Fund (SDAF).

Funding under the Reimbursable program covers the following ammunition management areas.

a. Security Assistance Program.

b. Other Service use of Navy ordnance during joint exercises.

CHAPTER 2.2**The Planning, Programing, and Budgeting System (PPBS)****Table of Contents**

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CHAPTER 2.2

The Planning, Programming, and Budgeting System (PPBS)**2.2.1 The Planning, Programming, and Budgeting System (PPBS).**

2.2.1.1 General. The DoD planning, programming and budgeting system is the mechanism by which the strategic concepts and initiatives of the Services are coordinated and approved within DoD. These concepts are translated into the weapons systems, materials, manpower, and financial resources needed to maintain the national security objectives of the United States. The purpose of the Planning, Programming, and Budgeting System (PPBS), as stated in DoDINST 7045.7 of 23 May 1984 (NOTAL), is to produce a plan, a program, and finally, a budget for DoD. The budget is forwarded to the President for approval. The President's budget is then submitted to Congress for authorization and appropriations, which are then apportioned and allocated to the users.

2.2.1.2 Instructions. DoDINST 7045.7 of 23 May 1984 (NOTAL) describes the DoD PPBS in detail. The Navy Programming Manual (N80P-IE) describes all aspects of the Navy programming system.

2.2.1.3 Cyclical Process. The PPBS is a cyclical process based on and consistent with the objectives, policies, priorities, and strategies derived from National Security Decision Directives. Throughout the three major phases of planning, programming, and budgeting, the Secretary of Defense (SECDEF) provides the centralized policy direction while placing program execution authority and responsibility with the respective Military Services. The decisions of the Services (as modified by legislation or SECDEF direction) are reflected in the Future Years Defense Program (FYDP) as SECDEF approved programs for the military functions of DoD.

2.2.1.4 Publication. Timely publication of the PPBS documents is critical since they represent a coordinated effort among many participants within the Services. To achieve timeliness, the Defense Resources Board (DRB) annually develops and issues a schedule of significant events for the upcoming calendar year. The DRB schedule specifies the time for the following.

a. Submission by the Joint Chiefs of Staff (JCS) of a recommended national military policy and related military advice.

b. Submission and review of the Program Objective Memorandum (POM).

c. Issuance of the Defense Guidance (DG).

d. Submission by the JCS of the Joint Program Assessment Memorandum (JPAM).

e. Development and processing of Issue Books (IBs).

f. Issuance of the SECDEF Program Decision Memoranda (PDMs).

g. Budget estimates.

h. Program Budget Decisions (PBDs).

2.2.1.5 PPBS Process. Figure 2-2-1 illustrates the sequence of the three PPBS phases. NAVCOMPINST 7102.1C (NOTAL) defines the Navy's policies and responsibilities for implementing the PPBS. It assigns CNO the responsibility for the following.

a. Executing the PPBS within the Navy.

b. Determining requirements for new programs and changes to existing programs.

c. Originating and coordinating requests for new programs and changes to old programs in accordance with the provisions of DoDINST 7045.7 of 23 May 1984 (NOTAL).

d. Developing the Navy's response to SECDEF fiscal and logistics guidance, change decisions, program change requests, and PDMs.

e. Developing and coordinating the Navy's POM.

Additionally, NAVCOMPINST 7102.1C (NOTAL) makes the Assistant Secretary of the Navy (Financial Management and Comptroller) ASN(FMaC) is responsible for designing and maintaining a cost information system for Navy programs, for maintaining the relationship between program costs and source of funds, for evaluating programs, program changes, and other PPBS documents, and for coordinating the preparation and processing of the Navy's annual budget estimates.

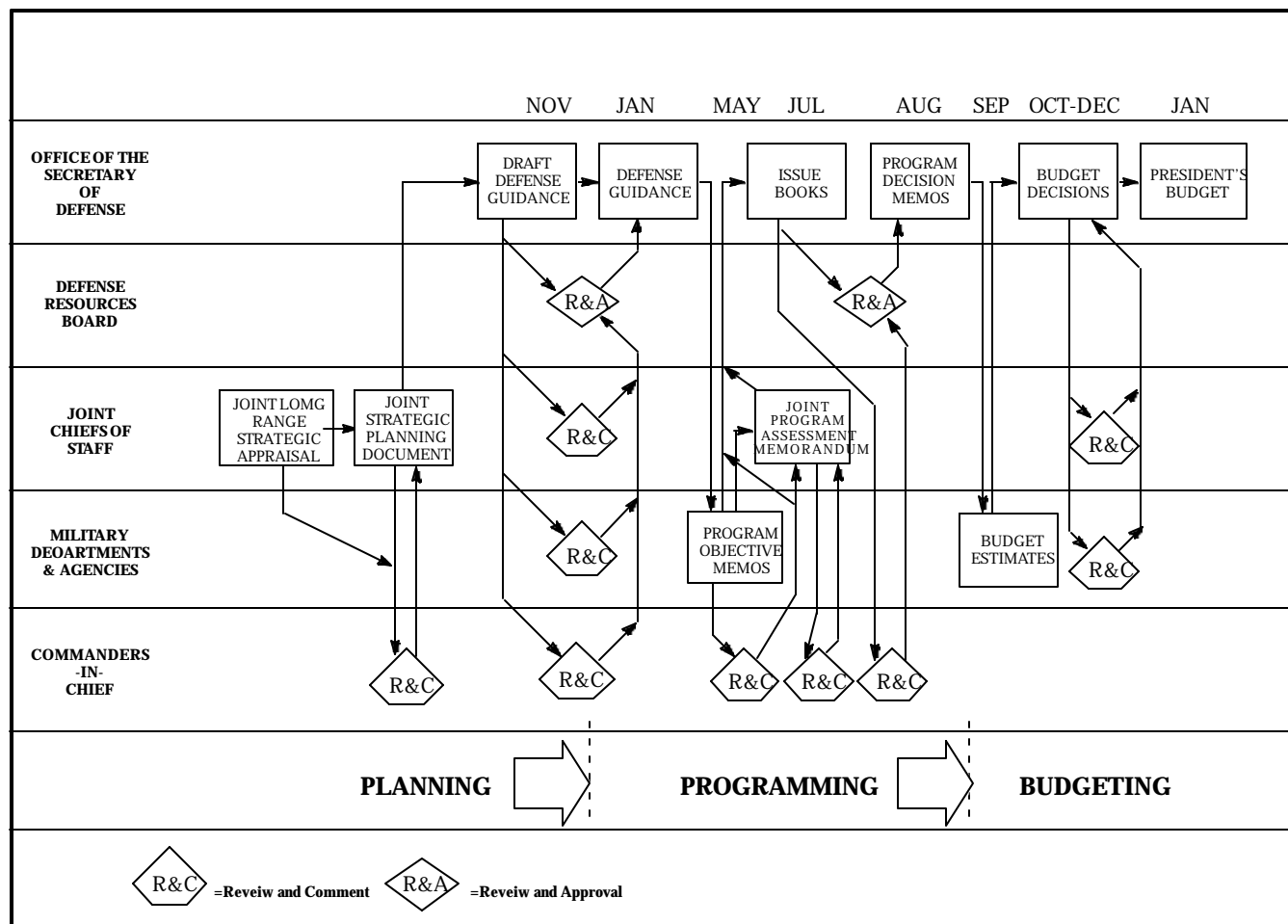


Figure 2-2-1. The PPBS Process.

2.2.2 Planning Phase. The planning phase of the PPBS is primarily an Office of the Secretary of Defense (OSD) level evolution with inputs from the Joint Chiefs of Staff (JCS), the Joint Commands, and the Military Departments. The Defense planning process starts with the Joint Strategic Planning Document (JSPD) which is developed from the Joint Long Range Strategic Appraisal (JLRSA). The OSD staff takes the JSPD and inputs from the Commanders in Chief (CinCs) and Military Departments and develops the Defense Guidance (DG). The JCS strategic planning process is unconstrained by resources, and develops minimum risk force levels. OSD attempts to define a fiscally attainable planning force in the DG.

2.2.2.1 Joint Long Range Strategic Appraisal. The JLRSA is prepared by the JCS to provide transition from long-range to midrange strategic planning and to stimulate focus on strategic studies. Additionally the JLRSA influences the development of the JSPD.

2.2.2.2 Joint Strategic Planning Document. The JSPD is submitted by the JCS to SECDEF. It is the product of inter-Service coordination and contains the military strategic concepts and recommendations of the Military Services for attaining the national security objectives. It includes a summary of the JCS planning force levels required to execute the approved national military strategy with a reasonable assurance of success. It also contains views on the attainability of these forces in consideration of fiscal responsibility, manpower resources, material availability, technology, industrial capacity, and interoperability in joint and cross-Service programs. The JSPD shall also provide an appraisal of the capabilities and risks associated with the programmed force levels. Recommended changes to current force planning and program guidance are included. The JSPD is the basic statement that provides a vehicle for an exchange of views on defense policy among the President, SECDEF, JCS, and the National Security Council.

2.2.2.3 Defense Guidance. After consideration of the views and recommendations expressed in the JLRSA and JSPD, a draft DG is issued to solicit comments of all DoD Components, including the CinCs, on the major issues, problems, and resource constraints in developing and programming forces to execute the policy, strategy, and management direction. The approved version of the DG is subsequently promulgated and constitutes the authoritative statement directing defense fiscal and planning guidance for development of the POM. The DG will consist of the following elements.

a. Near and long-term threat assessment and opportunities.

- b. Policy and strategy guidance.
- c. Force planning guidance.
- d. Resource planning guidance.
- e. Fiscal guidance.
- f. Unresolved issues requiring further study.

2.2.3 Programming Phase. During the PPBS programming phase, DON assesses the status of its programs as they evolved from the previous cycle of PPBS, identifies unresolved issues, and translates the DG into achievable packages recognizing fiscal and resource constraints. The product of the DON programming process is the DON POM. The POM is a comprehensive and detailed expression of the total requirements affordable within fiscal constraints associated with the mission and commitments of the DON. The POM is presented as changes to the President's Budget to update the OSD FYDP database.

2.2.3.1 Program Objective Memoranda. Annually, each Service submits to SECDEF a POM that is consistent with the strategy and guidance, both programmatic and fiscal, as stated in the DG. Major issues that are required to be resolved during the year of submission must be identified in the POM. The programs presented reflect an analysis of the missions to be achieved, the alternatives to accomplish them, and the required resources. In addition to the budget year, the program period is 4 years beyond the budget year for costs and manpower and 7 years beyond the budget year for forces. The POM represents the recommended changes to the current FYDP and specifies, by program element, the Navy's force requirements, manpower costs, material recommendations, and the rationale for the proposed changes to the FYDP base. Backup documents are included with the POM for new procurements. As directed by the annual schedule disseminated by the DRB, the Navy initiates and submits its POM to SECDEF for approval. Generally, the Navy's POM cycle commences 3 years prior to program execution and is successively reviewed and changed during the course of the budget cycle. The POM that was formulated in October 1995 reflects the "planned" FY 98 requirements to be reflected in the FY98-2002 FYDP. Components of the Navy's POM and the supporting documents for surface ordnance are initiated by the PEOs, DRPMs, and Logistics Commands and submitted to COMNAVSEASCOM for review, consolidation, and forwarding through the review process. Figure 2-2-2 illustrates the POM process chronology for the current, execution, and budget years at the PEO/DRPM level.

The POM may be revised after submission when the Navy believes that such revision will result in a better balanced program. However, if out-of-cycle changes cannot be

processed in time to be included in the SECDEF PDM for the specific program, a Program Change Request (PCR) must be submitted.

2.2.3.2 Baseline Assessment Memorandum (BAM). The Navy POM submission undergoes an internal assessment by an assigned Assessment Sponsor (CNO (N411) for ordnance) to validate the acquisition and maintenance requirements for each ordnance program. The process assesses the projected ordnance inventory against the POM Non-Nuclear Ordnance Requirement (NNOR). The process identifies each ordnance item or family as: Green - Inventory greater than Shipfill + Combat Expenditure (CE); Yellow - Inventory greater than CE, and; Red - inventory less than CE. The process results in recommended program adjustments to best satisfy the requirements with the available dollars and identifies potential bill payers. The Assessment Sponsor considers the DON Joint Munition/Support Area Assessment (JM/SAA) and Investment Balance Review (IBR) issues in establishing assessment priorities.

2.2.3.3 Joint Program Assessment Memorandum. The JPAM is submitted by the JCS to SECDEF to facilitate OSD decisions relative to the POM submittal. The JPAM provides a risk assessment based on the composite of the POM force recommendations. It also includes the views of the JCS as to the balance and capabilities of the overall POM force and support levels. In conjunction with the POM, the JPAM provides the basis for issue by the SECDBF of the Issue Books (IBs) and Program Decision Memoranda (PDMs).

2.2.3.4 Issue Books. Based on review of the POM in relation to the JPAM and the DG, OSD prepares IBs on matters having broad policy, program, or resource implications. These IBs address broad categories and constitute an evaluation of how well the POMs reflect the strategy, and the risks and shortcomings involved. The IBs are reviewed by the Services, the Office of Management and Budget (OMB), and finally, by the DRB. The major issues that are raised during the program review will be measured against the DG, available budgetary resources, and the management initiatives. These reviews should produce a program that demonstrates a maximum degree of policy implementation consistent with national resource limitations. There are eight IBs with the following titles.

a. Book 1: Policy and Risk Assessment Book. Focuses attention on broad Defense-wide policy, strategy and

resource allocation issues, and estimates the risk associated with the proposed programs submitted by the DoD Components.

b. Book 2: Nuclear Force Book. Focuses on both Strategic and Theater Nuclear Force issues.

c. Book 3: Conventional Force Book. Focuses on General Purpose Force issues.

d. Book 4: Modernization and Investment Book. Focuses on all issues which are predominantly of a modernization and investment nature that are not appropriate to include in the Nuclear and Conventional Force Books.

e. Book 5: Readiness and Other Logistics Book. Focuses on readiness and logistics issues.

f. Book 6: Manpower Book. Focuses on manpower related issues.

g. Book 7: Intelligence Book. Focuses on Defense elements of the National Foreign Intelligence Program, the Defense Reconnaissance Support Program, and other compartmented Tactical Intelligence and Related Activities.

h. Book 8: Management Initiatives Book. Reviews the application in the POMs of the principles enunciated in the acquisition management initiatives, and reviews and summarizes the economies and efficiencies in the submissions.

2.2.3.5 Program Decision Memoranda. DRB program review decisions as a result of the above are recorded in a set of PDMs signed by SECDEF and distributed to the Services and OMB. The PDMs conclude the programming phase of the PPBS and represent the basis for the budget submissions.

2.2.4 Budgeting Phase. During the budgeting phase of PPBS, DON prepares budget estimates and submits them to OSD for review. DON starts with the first year of the POM FYDP, as modified by the PDM, as a baseline and reviews all aspects of the program in detail. This is done to ensure that it is both executable and properly priced. It also ensures reflection of congressional actions, late arriving policy guidance, or other data affecting program composition. The resulting budget estimates are forwarded to OSD/OMB as the DON budget request supported by a large variety of summary and detailed budget exhibits.

CY 95	FY 95	FY 96	FY 97	FY 98
JANUARY	l CURRENT EXECUTION SUMMARY	u SUBMIT CONGRESSIONAL BUDGET l PREPARE TENTATIVE TECHNICAL OPERATING BUDGET		
FEBRUARY	l MID-YEAR REVIEW GUIDANCE l SUBMIT MID-YEAR REVIEW l CURRENT EXECUTION SUMMARY	l APPORTIONMENT REVIEW GUIDANCE l SUBMIT APPORTIONMENT REVIEW	n POM DEPOT MAINTENANCE UPDATE GUIDANCE n SUBMIT POM UPDATE	
MARCH	l NAVSEA MID-YEAR REVIEW QUESTIONS l CURRENT EXECUTION SUMMARY	u CONGRESSIONAL HEARINGS		
APRIL	l CURRENT EXECUTION SUMMARY	u CONGRESSIONAL HEARINGS		
MAY	l CURRENT EXECUTION SUMMARY		t REVIEW OF O&MN t SUBMIT REVIEW t ASN(FM&C) GUIDANCE	
JUNE	l CURRENT EXECUTION SUMMARY		t SUBMIT ASN(FM&C) BUDGET	
JULY	l CURRENT EXECUTION SUMMARY		t ASN(FM&C) HEARINGS t ASN(FM&C) MARK-UP t SUBMIT RECLAMA	
AUGUST	l CURRENT EXECUTION SUMMARY		s OSD/OMB GUIDANCE	
SEPTEMBER	l BALANCE SPENDING AUTHORIZATION/PLAN l PREPARATION FOR FUNDING CLOSEOUT l CURRENT EXECUTION SUMMARY		s SUBMIT OSD/OMB BUDGET	
OCTOBER		l EXECUTE BUDGET l CURRENT EXECUTION SUMMARY	s OSD/OMB HEARINGS s PBD GUIDANCE s SUBMIT RECLAMA	n POM GUIDANCE n SUBMIT POM n NAVSEA POM REVIEW
NOVEMBER		l CURRENT EXECUTION SUMMARY		n CNO ISSUE PAPER GUIDANCE n SUBMIT ISSUE PAPERS
DECEMBER		l CURRENT EXECUTION SUMMARY	u CONGRESSIONAL GUIDANCE	n POM ASSESSMENT GUIDANCE n SUBMIT POM ASSESSMENT

l = EXECUTION; t = ASN(FM&C); s = OSD/OMB; u = CONGRESSIONAL; n = POM

Figure 2-2-2. CY 95 PPBS Calendar.

2.2.4.1 Budget Estimates. With the establishment of program levels in the POM, as modified by PDMs, the budgeting phase begins with the Military Services developing detailed estimates for the budget year of the approved program. Annually, the Navy submits its budget estimate to SECDEF in accordance with DoD 7110.1-M. The budget estimates include the prior, current, and budget fiscal years. The estimates are prepared and submitted based on the program approved in the PDMs. Modifications may be necessary to remain consistent with changes in national policy.

2.2.4.2 Budget Decisions. The budget estimates submitted by the Services are reviewed jointly by OSD and OMB with participation and input by the Services. This review is interactive and decisions are made which include the current year, budget year, and the authorization year (budget year plus 1), including an estimate of the resource impact on the 3 succeeding program years. Budget estimate and change decisions are reflected in SECDEF approved and published PBDs. PBDs that are approved by the Secretary or Deputy Secretary of Defense are translated into the automated budget review system to reflect changes in the submissions. Periodic summary status reports will be provided by the ASD(C) to the Secretary and Deputy Secretary, the OSD managers and staff, OMB, and the submitting DoD Components. Status will be in terms of total obligational authority, budget authority, outlays, and military/civilian end-strengths. After review of the Budget Decisions, DoD Components may identify issues that warrant a major issue meeting with the SECDEF. Later decisions made by the Secretary are announced in revisions to issued PBDs.

2.2.4.3 President's Budget. The end result of each PPBS cycle is the President's Budget which is sent to Congress along with appropriate OSD justification exhibits for use during the Congressional authorization and appropriation processes.

2.2.5 Future Years Defense Plan.

2.2.5.1 General. The FYDP is the official document which summarizes for each of the Services, the force and resource requirements associated with the programs approved by SECDEF in PDMs, program change decisions, and budget decisions. The FYDP is composed of 11 major defense programs. In its first dimension, it is used as a basis for internal DoD program review. In its second dimension, by the input-oriented appropriation structure, it is used by Congress in reviewing budget requests and enacting appropriations. Hence, it serves a purpose of cross-walking the internal review structure with the congressional review structure. This two-dimensional struc-

ture and attendant review methodology provides a comprehensive approach to accounting for, estimating, identifying, and allocating resources to individual or logical groups of organizational entities, major combat force or support programs referred to as program elements.

2.2.5.2 FYDP Defense Programs. To make meaningful decisions, provisions for accumulating and controlling information, for planning and programming, and in execution, categories called programs are used. The 11 programs used by the Military Services are as follows.

- a. Program I: Strategic Forces.
- b. Program II: General Purpose Forces.
- c. Program III: Intelligence and Communications.
- d. Program IV: Airlift and Sealift.
- e. Program V: Guard and Reserve Forces.
- f. Program VI: Research and Development, Test and Evaluation.
- g. Program VII: Central Supply and Maintenance.
- h. Program VIII: Training, Medical, and Other General Personnel Activities.
- i. Program IX: Administration and Associated Activities.
- j. Program X: Support of Other Nations.
- k. Program XI: Special Operations Forces.

2.2.5.3 Program Elements. Each of the 11 FYDP programs are divided into program elements. All Navy departmental organizations, field activities, and operating forces are assigned to one or more program elements. The account structure of program elements within the FYDP programs is designed to display total costs in two formats:

- a. Organizational. Oriented for management use.
- b. Mission. Oriented for planning and programming use.

2.2.5.4 FYDP Publication. The FYDP is published three times a year (excluding the historical FYDP which is published following the POM update). It reflects the total resources programmed by DoD by fiscal year. Force structures are presented in the FYDP for the prior fiscal year, current fiscal year, budget year, and the 7 succeeding years. Cost and manpower data are shown for the prior fiscal year, current fiscal year, budget year, and the four succeeding years. DoDINST 7045.7 of 23 May 1984 (NOTAL) pro-

vides specific guidance and procedures for processing changes or adding new programs to the FYDP.

2.2.5.5 New Approved Program Base. During the budget process, the receipt of PDM, PBD, or SECDEF memoranda reflecting the decisions of SECDEF constitutes a new approved program base when entered into the FYDP by the Navy.

2.2.6 Budget Execution. Budget execution is that phase of the budget process which encompasses all the actions required to accomplish effectively, efficiently, and economically the programs for which funds were requested and approved by competent authority. The budget execution phase overlaps the PPBS budgeting phase and continues throughout the period of availability of the appropriations for obligation or expenditure. Effective budget execution requires procedures for control and evaluation which will ensure compliance with regulations and limitations established by Congress, the General Accounting Office (GAO), the Treasury Department, OMB, and SECDEF, as well as by all echelons of responsibility and command within the DON.

2.2.6.1 Appropriation Enactment. Provisions of the Congressional Budget and Impoundment Control Act of 1974 (P.L. 94-344) require Congress to pass the DoD Appropriations Act by 1 October of each year. In the event the Act has not been passed by this time, Congress provides funding authority through a Continuing Resolution Authority (CRA) making interim appropriations available. The intent of the CRA is to provide funds to maintain operations at a rate necessary for the orderly continuation of activities until regular appropriations are enacted. The CRA language normally provides for the amounts Congress deems necessary to continue operations in support of projects or activities until appropriation bills can be enacted. Based on the CRA and the DON request, the Treasury Department prepares temporary appropriation warrants which, after being counter-signed by the GAO, are forwarded to the DON as certification that the specified amounts are available for commitment, obligation, and expenditure against the direct budget programs.

2.2.6.2 Apportionment. After Congressional enactment of the budget into authorization and appropriation acts, the Services are responsible for accountability and execution. Obtaining appropriated funds is the initial step in the budget execution phase. Funds are annually apportioned to the Services after review of resource requirements. Apportionment is defined as "a determination by the OMB Director as to the amount of obligations which may be incurred during a specified period under an appropriation, contract authorization, other statutory authorizations, or a combination there-

of, pursuant to 31 U.S. Code 1512." The law provides that appropriations or funds shall be apportioned so as to prevent obligation or expenditure of an account in a manner which would require a deficiency or supplemental appropriation and so as to achieve the most effective and economical use of the amounts made available. It also authorizes, in conjunction with the apportionment of any appropriation, the establishment of reserves to provide for contingencies or to effect savings whenever possible. Under certain circumstances, OMB may exempt certain appropriations from apportionment relying on other financial controls. OMB Circular No. 34 (NOTAL), issued under 31 U.S. Code 1512, prescribes the forms and procedures for the required apportionment and reporting there under.

a. **Timing.** The Assistant Secretary of the Navy (Financial Management and Comptroller) ASN(FM&C) requires the submission of an Apportionment and Reapportionment Schedule (DD 1105). ASN(FM&C) prescribes the specific timing of submission requirements as imposed by OMB in compliance with the Congressional Budget and Impoundment Control Act (P.L. 94-344). ASN(FM&C) requires the submission of proposed operating budgets and financial plans for staff review in anticipation of the formal submission of an apportionment request based on the enacted appropriation. This review provides an opportunity for a reassessment of budgetary requirements for the fiscal year which will begin on 1 October. The process begins several months prior to 1 October, when the headquarters components (offices, bureaus, commands, or Headquarters, U.S. Marine Corps) direct shore activities and other command echelons to prepare operating budgets.

b. **Submission Requirements.** Development of operating budgets and apportionment data is undertaken by the offices designated as responsible offices and/or administering offices for the various appropriations. It is also undertaken by their component commands or activities, prior to receipt by the ASN(FM&C) of specific guidance from ASN(FM&C). As soon as DoD guidance is available, the Assistant Secretary of the Navy Financial Management and Comptroller ASN(FM&C) issues a call for submission of apportionment material to his office in sufficient time for review prior to the submission to ASN(FM&C). Additionally, to assist in determining the dollar needs by month, prior to enactment of the annual appropriations, a monthly phasing of the total cumulative obligations for the period October through March, for both the direct and reimbursable programs of general fund appropriations, is included as part of the initial apportionment request. Similar phasing for the OSD transfer accounts to the DON, excluding the Military Assistance accounts, are required to be submitted to the Comptroller. When the formal apportionment request is submitted subsequent to passage of the appropriations act, the Form DD 1105 for each

appropriation must be accompanied by supporting schedules. This includes a Proposed Financial Plan for Obligations, a Proposed Financial Plan for Expenditures, and an Analysis of Reimbursements. Instructions for preparation of the DD 1105 and the additional supporting schedules are included in the Budget Guidance manual. Each headquarters component which is responsible for preparation of any part of the Apportionment Submission in the review prior to enactment or after the enactment of the appropriation calls for participation by its component commands or by shore activities as required.

c. Review and Authorization. As estimates flow upward with review, revision, and consolidation occurring at each level of command, the latest guidance from appropriation/program sponsors and current estimates of requirements are reflected in the decisions made. The review of apportionment submissions within DON is described in the DON Budget Guidance Manual. The ASN(FM&C) forwards the approved operating budget/financial plan/apportionment estimates to OSD. OSD is concerned with the substantive detail of the apportionment request as well as the dollar levels. Accordingly, decisions are based on evaluations of program proposals; and procurement, research, and development line items. With respect to the latter items, a decision is required as to current release of funding authority or later release pending further study of need and justification. At the conclusion of this review process, determinations are made as to the approved funding for the Military Departments with appropriate documentation of obligational authority, based either on enacted appropriations or on a CRA.

d. Documentation of Obligational Authority. In addition to the approved DD 1105 (if received from OMB), ASN(FM&C) provides DON with a document which establishes authorized funding levels; i.e., obligational authority for direct and in some cases reimbursable programs for each appropriation. For annual appropriations, the document reflects quarterly distributions, which are subject to 1 U.S. Code 1512 at the overall appropriation level. If the approved apportionment has not been received because the appropriation has not been enacted or because the appropriation has been exempt from apportionment, it is still incumbent upon ASN(FM&C) to establish authorized funding levels at the beginning of the fiscal year. Generally, the OSD funding authorization document establishes applicable program/budget activity/procurement line item/program element distributions of the total resources for the year. These documents are revised during the year to reflect appropriation enactment, releases from deferral, reprogramming, or other actions which affect the funding authority. The program/budget distribution amounts, which in most cases are administrative limitations or targets, provide a

base for reprogramming subject to stated limits for deviation without recourse to the issuing authority. The authorization documents vary with the appropriation involved. ASN(FM&C) conveys obligational authority for the personnel, and Operation and Maintenance appropriations by means of a memorandum which approves obligational authority by quarter. For the Procurement appropriations, ASN(FM&C) transmits a Procurement Program/Fund Approval for Direct Obligation (SD 487). This provides specific guidance as to line items that are approved for obligation and those which require further consideration (timing, need, justification, etc.) to be approved. As the latter items are approved for obligation, ASN(FM&C) issues amendments to the initial SD 487. For Research and Development appropriations, ASN(FM&C) issues RDT&E Program/Fund Authorization (SD 440). This establishes obligation limitations by budget sub activities (program elements). These RDT&E sub activities limitations constitute administrative subdivisions of funds subject to 31 U.S. Code 1512 constraints.

e. Monthly Reports.

(1) General. Monthly Reports on Budget Execution (DD 1176) are submitted as required by OMB and OSD to reflect the status of available funds, supplemented by the Report on Reimbursements (DD 725). DD 1176 is also supported by a subsidiary report of transactions below the appropriation level, prepared on an Appropriation Status by Fiscal Year Program and Subaccounts (DD 1002). These reports are prepared monthly by the responsible office for each appropriation in accordance with Comptroller instructions and implementing directives of other headquarters components. The Director, Fiscal Management Division CNO (N82), prepares the reports for Navy appropriations for which CNO is designated as responsible office. Subsidiary reports, often using the same forms, are prepared by administering offices and forwarded to the responsible office for its use in preparing a consolidated report for the appropriation. Upon receipt of all reports, the Office of Budget and Reports, on behalf of the Comptroller, coordinates the total DON reports and forwards them to OSD, OMB, Congressional Budget Office, and the House Appropriations Committee.

(2) Special Procedures. Prior to enactment of appropriations, when operating under the authority of a CRA, the amounts of temporary warrants will be reflected on line 1A of DD 1176 each month beginning with the October reports. Concurrently, the DD Form 1002 reports will be prepared on the basis of detailed authorizations allocated by Program/Fund Allocation NAVCOMPT 2058. If necessary, there will be a one-line adjustment at the appropriation level, reducing the total available to the level authorized by the temporary warrants. (In the ab-

sence of a temporary warrant, adjust to the amount entered on line IA of the related DD 1176.) Such adjustment is identified as "Unallocated ASN(FM&C) Reserve" in column a, and appropriate minus amounts will be entered in columns b, c, d, and i.

f. **Year-end Closing Statement.** An annual report is prepared by the ASN(FM&C) staff for the Treasury Department and submitted to OSD under the certification of the Assistant Secretary of the Navy (Financial Management and Comptroller) ASN(FM&C) to show the end-of-year (30 September) unobligated and unexpended balances. It also shows the unpaid obligations of all appropriations and funds. The Treasury Department uses the report to establish year-end balances, withdraw or restore funds as necessary and close accounts when the statutory period following availability has passed. The report, which meets the requirements of Section 1311 of Public Law 663, 83rd Congress (31 U.S. Code 1501), as well as other legal and regulatory provisions, is submitted on the Year-End Closing Statement (Treasury Department Form (TFS 2108). The report is prepared, certified, and forwarded to the Comptroller by the responsible office for each appropriation or fund account, based on subsidiary certifications from administering offices or sub allocation holders. The reports for appropriation accounts for which CNO is the responsible office are prepared by CNO (N82). Copies of the report for all appropriations, as certified by ASN(FM&C), are furnished to the offices, bureaus, commands, and Headquarters, U.S. Marine Corps for use as the source of amounts to be shown in prior year columns of financial reports, budget status reports, apportionment and reapportionment schedules, and budget schedules and statements.

2.2.6.3 Allocation. An allocation is an authorization by a designated official of a DoD component, which makes funds available to an operating agency. DON allocations are made by the Comptroller to the head of the responsible office for the appropriation or, if the Comptroller is the responsible office, to the head of the administering office. A sub allocation is a transfer or delegation to the head of another office, bureau, or command of some portion of the authorization granted to an allocation holder. When the administration of an appropriation is divided, the allocation holder sub allocates the entire amount of a budget activity, or other subdivision of the appropriation to the head of another office, bureau, or command when that organization has been designated as administering office for the budget activity. The sub allocation document states that all financial control of jurisdiction of and responsibility for, amounts allocated are passed to the recipient. Generally, suballocation is made to an official who exercises overall administrative responsibility for the execution of the

programs funded by the applicable subdivision. The suballocation holder issues allotments to the official who exercises immediate supervision of the specified portion of the program. Sub allocations are used only in the instances of appropriations which are not administered under the Resource Management Systems (RMS) concept of operating budgets.

a. **Purpose.** M locations provide a means of establishing responsibility for fund administration and of ensuring compliance with Congressional intent and OSD constraints in the use of funds for programs below the appropriation level. The amounts allocated, within the program/budget distributions applicable to each appropriation, provide dollar limitations for use in administration, accounting, and control. They are subject to reprogramming limitations established by OSD and the Comptroller.

b. **Documentation.** The document used to convey authority from the Comptroller to the head of the responsible office is the Program/Fund Allocation form NAVCOMPT 2058. These allocations establish availability based on the budget as submitted to Congress and modified by Congressional action on the budget request, by apportionment action of OMB and OSD, and by approved reprogramming actions. Prior to enactment of the annual Appropriations Act, the Form NAVCOMPT 2058 establishes the level of programs authorized under the continuing resolution and provides interim funding for DON general fund appropriations. Amounts are established within the authority of the restrictive limitations as stated on the ASN(FM&C) memorandum for the personnel, and operation and maintenance appropriations; RDT&E Program/Fund Authorization Form (SD 440); Procurement Program/Fund Approval for Direct Obligation Form (SD 487); and other schedules issued by OSD in the fund authorization process. Upon enactment of the appropriations, amounts established as limitations subject to 31 U.S. Code 1512 through the interim funding procedures are rescinded and replaced by the amounts newly authorized. Distribution of availability within an appropriation is made by budget activity, procurement line item, construction category, program element or other program category as appropriate.

c. **Scope.** The allocation includes both appropriated funds and anticipated reimbursements, other than those for work and service orders which are subject to automatic apportionment, and therefore, automatically increase the allocation. It specifies the amounts that are available for obligation and the amounts that are not available for obligation. The amounts not available for obligation are categorized by OMB, OSD, and the Office of ASN(FM&C). Statutory or other limitations are indicated by footnotes. The amount of reimbursable work or service orders received and accepted is automatically allocated when apportion-

ment is automatic and as a result is not part of the amount allocated on the NAVCOMPT 2058. However, in the second and subsequent years of availability, the unobligated balance apportioned reflects the unobligated balance of reimbursable work and service orders from the prior year, and becomes a part of the allocated amount. While operating under the authority of a continuing resolution, a reserve is established in Section IA and II of the NAVCOMPT 2058 to balance authorized program amounts with financial resources contained in temporary warrants. Obligations and commitments may be incurred by procurement line item or other appropriation subdivision in the program amounts indicated on NAVCOMPT 2058, provided that the appropriation level limitations are not exceeded.

d. **Preparation and Approval.** NAVCOMPT 2058 and 2058-CT are prepared and approved by the Office of Budget and Reports, on behalf of the Comptroller of the Navy. After approval, they are forwarded to the responsible office for the appropriation for implementation.

e. **Constraints.** Generally, the NAVCOMPT 2058 establishes distributions for each program/budget category as applicable and indicates, by footnotes, the quarterly limitations at the overall appropriation level for quarterly apportionments. The recipient is responsible for distributing the quarterly limitations as appropriate below the appropriation level, ensuring that the cumulative total of quarterly limitations does not exceed the quarterly apportionment. The recipient is also responsible for establishing controls to ensure that any further subdivisions of allocated funds, as well as allotments, commitments, obligations, and expenditures, do not exceed the quarterly and annual limitations established by the NAVCOMPT 2058. Subsidiary constraints are shown as footnotes to the NAVCOMPT 2058 to reflect statutory and/or administrative requirements. Administration of these constraints is the allocation recipient's responsibility.

2.2.6.4 Allotment. An allotment is an authorization granted within and pursuant to an allocation or suballocation for the purpose of incurring commitments, obligations, and expenditures. An allotment may be made to a subordinate of a headquarters component by name or to the commanding officer of a shore activity by title. Allotments are used only for appropriations which are not administered under the RMS concept of operating budgets. Sub allotments may be issued by an allotment holder to transfer responsibility for administration of some portion of the funds to another activity. In such cases, the sub allotment is in a fixed amount and carries the same responsibility for administrative control as a primary allotment.

a. **General.** Allotments convey the authority to incur commitments and obligations and to make expenditures from the allocation or sub allocation holder to an official who is charged with a specific function or mission. The allotment, prepared on the Allotment/Suballotment Authorization (NAVCOMPT 372), provides the basis for establishment of the accounts against which obligation and expenditure documents are charged.

b. **Limitations.** Since an allotment is an administrative subdivision of funds, the total amount is limited by 31 U.S. Code 1512. However, in the case of allotments from appropriations for which OMB has granted automatic apportionment of anticipated reimbursements for work or service orders accepted, such orders provide an automatic increase to the allotment. Although an allottee is issued only one allotment from a given budget activity, the allotment may provide information as to further subdivisions at lower levels with stated degrees of flexibility as to adjustments between those subdivisions.

c. **Centrally Managed Allotments.** A centrally managed allotment is a specific amount made available by the holder of an allocation or suballocation for charges for specified purposes by designated officials, without specific limitations as to any individual official. Such allotments are established subject to the approval of the Comptroller when regular allotments are impractical. Charges to the centrally managed allotments must be limited to those for the specific functions for which the allotment is designated and must be restricted to transactions which fall within one budget activity. An allocation or sub allocation holder may establish no more than one centrally managed allotment under a given budget activity. Adequate systems of control must be employed to prevent over obligation or over expenditure. If absolute controls are not available, there must be a system of frequent accounting and reporting that will provide sufficient notice of the need for increasing the allotment or for imposing restrictions.

2.2.6.5 Reprogramming. Reprogramming encompasses changes in the application of financial resources from the purposes originally contemplated and budgeted for. The term "reprogramming," however, has been extended to include actions at any level within DoD to reallocate or redistribute resources among program/budget categories. These reprogramming decisions are subject to constraints involving thresholds which establish the level of approval according to the scope of the proposed change. Limitations were imposed on the authority granted to DoD for reprogramming funds, effective with the FY 74 DoD Appropriations Act. Two general provisions of the 1974 and subsequent Appropriations Acts have had an impact on the reprogramming of funds. The first states that "No part of the funds in this Act shall be available to prepare or present

a request to the Committees on Appropriations for the reprogramming of funds, unless for higher priority items, based on unforeseen military requirements, than those for which originally appropriated and in no case where the item for which reprogramming is requested has been denied by the Congress." Under the general provision covering the transfer authority granted to SECDEF there is also a provision... "that such authority may not be used unless for higher priority items, based on unforeseen military requirements, than those for which originally appropriated and in no case where the items for which funds are requested has been denied by the Congress..." As an outgrowth of these provisions, DoD modified the formal system governing reprogramming of funds after consultation with the Congressional committees.

2.2.7 Standard Accounting and Reporting System (STARS).

2.2.7.1 General. STARS is used to classify and record financial transactions from the Chart of Accounts through the allocation, distribution, initiation, commitment, and obligation stages. The Naval Supply Systems Command (COMNAVSUPSYSCOM) has the responsibility for the overall maintenance of the STARS in accordance with the Memorandum of Understanding (MOU) of 1 May 1985. The management of STARS is accomplished by the STARS Steering Committee under guidelines of the MOU. The Steering Committee is composed of the Comptrollers of all principal STARS user Commands (i.e., Systems Commands (SYSCOMs) etc.).

2.2.7.2 STARS Users. Users of STARS are responsible for performing the following.

- a. Classifying and recording financial transactions into STARS, including reimbursable transactions, from the Chart of Accounts through the allocation, distribution of funds, initiation, commitment, and obligation stages.

- b. Controlling and monitoring all input data to the various dictionaries and chart of accounts.

- c. Monitoring the correction of undistributed disbursements.

2.2.7.3 STARS Teleprocessing System. Certain management and accounting decisions require real time data entry and/or retrieval. The teleprocessing portion of STARS provides the capability to meet this demand. System users may perform queries, request special reports, and update planning data over remote terminals. Each transaction is subjected to security and validation checks. If valid, it is processed and a response is output on the user's termi-

nal. If an error is detected during validation or processing, the transaction is immediately canceled and an appropriate error message is written. STARS teleprocessing programs are designed to enhance entry and retrieval of data from the STARS database. To best fulfill management needs, an on-line processing capability is supplied for reports (queries) and planning updates that appear to be most suitable for teleprocessing. These include low-volume, high-frequency reports and those planning updates which do not affect fund availability, but which aid the managers in financial decisions. Accounting documents which establish and reduce fund availability are entered by the user community, and procedures that address these updates are provided in the Fleet Material Support Office Document No. P-104, UM-02. STARS query programs provide real time retrieval of current information. This capability ensures the accuracy of reports and the ability for system users to make decisions with speed and confidence. In most cases, users are able to employ the entire range of queries to extract all types of data. The following are general descriptions of groups of queries against certain STARS databases to provide an overview of the information available.

- a. Status of Funds Queries. The Status of Funds Query Program provides various methods of accessing the Major Claimant, Appropriation, Subhead Requiring/Financial Manager, Branch/Program Manager, Cognizant Manager, Participating Manager, Job Order, Project Directive Line Item (PDLI), Task, PDLI Suffix and Accounts Payable Code Levels of the STARS General Ledger Database. In addition, it allows access to the Document Status Database records related to a given PDLI, or Task and PDLI Suffix, or Accounts Payable Code. These queries provide managers with a rapid response to queries concerning the status of those funds for which they have been assigned responsibility.

- b. Gross Obligation Planning Queries. These queries access a Special Planning Segment of the General Ledger Database and provide the user with a comparison of planned versus actual gross obligations for a specific subhead.

- c. Document Status Queries. These queries provide current status of a total document or of an individual line of accounting within a document. It can be accessed rapidly with various methods.

- d. Transaction History Queries. The Transaction History Query Program provides users with the capability of obtaining current month transaction change information subsequent to the last month-end report. Each amount that is output by the History Queries is identified by an Amount Type Code.

e. Reimbursable Queries. The Reimbursable Query Program gives the manager the capability to monitor the entire reimbursable program from orders received to collection. The program provides various outputs summarized by Major Claimant, Appropriation, Subhead, Project Unit/Research/CAN/POM-SLI and Reimbursable Source Code.

f. Trial Balance Queries. The Trial Balance Query Program provides the users with cumulative general ledger balances for Major Claimant, Appropriation, and Subhead Levels.

g. Dictionary Table and Chart of Accounts Queries. These queries access the Dictionary Table and Chart of Accounts Database and provide the user with formatted responses from the particular database and segments requested.

h. FMS Dictionary Queries. These queries access the FMS segments of the Dictionary Database and provide the user with case management information.

i. Trial Balance Queries. Trial Balance Queries access the right side of the General Ledger Database and provide the user with a trial balance of general ledger accounts at various levels.

j. Payroll/Cost Accounting Dictionary Database Queries. These queries access the STARS Payroll or Cost

Accounting Dictionary databases to provide the user with formatted responses illustrating the contents of the selected database.

k. 2199 Transaction Queries. These queries display transactions from the Transaction Database by line item/input type of the entire operating budget.

l. Status of Funds for Budget Activity Queries. Status of Funds Queries access the General Ledger Database and provide the user with the current status of a specified Budget Activity.

m. Billing Queries. These queries access the Invoice/Billing Segments and the Billing/Collections Segments of the Table Database and are intended to aid managers in determining the status of those bills for which they are responsible.

n. Miscellaneous Queries. Queries in this subsection access the various STARS databases. However, they cannot be categorized in one of the subsections above, inasmuch as they are not consistent with the other programs available.

o. Special Request Reports. Various report programs permit the users to request hard copy reports via terminal during regular working hours. All requests are placed on the database and processed at night. The report will be distributed the following morning to the requester.

CHAPTER 2.3

Requirements Determination

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CHAPTER 2.3

Requirements Determination

2.3.1 Requirements Determination

2.3.1.1 General. The Requirements Determination Process is separate from the PPBS process, yet directly linked to the Programming phase of the PPBS. To better understand the requirements determination process for non-nuclear ordnance, it is useful to bear in mind the following distinguishing characteristics and principles.

a. As the customer, CNO and the Fleet define their respective needs in terms of the specific items, their quantities, the time frame they are needed, and their general distribution. As producers, the PEOs and DRPMs respond by providing the required items in a timely manner and ensuring their suitability and reliability for meeting intended needs. In this relationship, "service to the customer" and "support of the Fleet" are synonymous. To carry the analogy a step further, a service warranty exists between producer and user, in that the former maintains continuing responsibility for reliability, configuration control, and maintenance.

b. Requirements for surface ordnance are calculated on a principal-item basis. This is in accordance with CNO prescribed planning objectives expressed in terms of the number of days support (level-of-effort (LOE) items) that is based on projected combat usage, or as the actual quantities needed to counter or eliminate a specific threat (threat-oriented items). This is in contrast to the requirements computation in other commodity areas where support levels are not directly prescribed. Other commodity requirements are computed by an Inventory Control Point (ICP) on a secondary item basis considering past demand, or the relationship of the support item to the end-item program data. In surface ordnance it is the user who specifies the requirement.

c. Programming, budgeting, and procurement requirements are calculated in terms of principal line items which are organized and summarized under control numbers (see subparagraph 6-3.2.3.), grouping interchangeable Department of Defense Identification Codes (DoD-ICs) or Navy Ammunition Logistics Codes (NALCs). Requirements for secondary items (related subassemblies, components, etc.) are aggregated and included in the requirement for the principal item to which they relate.

d. Unlike other commodity areas, stratification does not have a significant role in computing individual item requirements for surface ordnance. Its primary use is to compare assets to requirements in order to isolate candidates for disposal. The stratification process is described in section 6-8.

2.3.2 Non-Nuclear Ordnance Requirements (NNOR) Process.

2.3.2.1 Development. The Navy's NNOR is developed in accordance with OPNAVINST 8011.9A (NOTAL) using the model as prescribed by OPNAVINST 8015.2 (NOTAL). The requirements are based on the SECDEF consolidated logistics guidance which sets the broad planning objectives in terms of wartime planning and mobilization scenarios. The Non-Combat Expenditure Requirement (NCER) specifies the support requirements for peacetime operations. In addition, SECDEF prescribes the overall fiscal policy and constraints governing the operational and logistics environment. The Navy's Non-Nuclear Ordnance Requirements Study (NNORS) is developed by CNO, and coordinated with the operational plans of the respective Fleet Commanders in Chief (FLTCinCs) and with the ordnance PEOs and DRPMs. The NNOR, when approved and issued by CNO, is the Navy's basic planning guidance for developing the POM and for programming the planned support requirements. The NNOR displays by geographic area the forces, planning factors, and requirements for selected items.

2.3.2.2 Alterations. Requirements determination is a dynamic on-going process, complicated by the incidence of changes inherent in the PPBS. Consequently, the Navy must frequently recalculate and adjust its program requirements. These alterations involve changes in forces, factors, asset and procurement status, guidance, etc., or are incurred by the introduction of special projects. This state of flux begins with the generation of the POM and continues through the apportionment review, 15 to 18 months in the future.

2.3.2.3 NNOR Objectives. The objectives of the NNOR process are to determine ordnance requirements for combat and noncombat expenditures, and to provide for the allocation and positioning of assets in accordance with Fleet plans. OPNAVINST 8010.12F (NOTAL) defines the total requirement for non-nuclear ordnance as "the sum of

combat (post D-day) and noncombat (pre D-day) requirements." These requirements consist of the following elements.

a. Combat Requirements

(1) Combat ammunition requirements for LOE items (e.g., ship gun ammo) are based on a specific number of days of support for various combat scenarios formulated by higher authority. The total combat requirement consists of the following strata.

(a) War Reserve Material Requirement (WRMR). Represents the overall or long-term planning objective, the aggregate of (b) and (c), below.

(b) Prepositioned War Reserve Material Requirement (PWRMR). That portion of the WRMR designated for positioning at or near the intended point of shipment or use.

(c) Other War Reserve Material Requirement (OWRMR). Combat resupply represents that portion of the total WRMR requirement which remains after the designation of the PWRMR.

(2) Combat weapons requirements for threat-oriented items (e.g. surface-launched missiles) are based on quantity needed to eliminate a specific threat and include, where allowed, the maintenance pipeline.

b. NonCombat Expenditure Requirements represent the total ordnance necessary to provide for peacetime operations (such as training or firepower demonstrations) as described in section 2-4.

2.3.2.4 Combat Requirements Methodology. The CNO determines combat ordnance requirements in accordance with the methodology developed in the NNOR, and based on SECDEF guidance and FLTCinC input to ensure compatibility with Fleet Operational Plans (OPLANS).

2.3.2.5 NonCombat Requirements Methodology. In contrast to combat requirements which are derived from higher level scenarios, noncombat requirements are submitted annually to CNO by the FLTCinCs and other major claimants as described in section 2-5. When the NCER requirements are approved by CNO they represent the ordnance needed for Fleet training and other peacetime operations and are included in the POM statement with the combat requirements.

2.3.3 Requirements Determination Responsibilities. Requirements development for Navy surface ord-

nance requires interaction and coordination across the echelons of CNO, FLTCinCs and other claimants, COMNAVSEASYS COM, and NAVAMMOLOGCEN. A general summation of the responsibilities specified in OPNAVINST 8010.12F follows.

2.3.3.1 CNO.

a. Updates and issues the NNOR to the FLTCinCs, PEOs, PMs, and subordinate commands for review and comment. The NNOR is updated annually during the first quarter of the fiscal year.

b. Issues the Navy's interpretation of the SECDEF Consolidated Guidance to the FLTCinCs, PEOs, and PMs. (This is issued during the first quarter of the fiscal year in the guidance for POM programming of ordnance applicable to the next budget year).

c. Approves and issues the WRMR combat allocations to FLTCinCs, PEOs, and PMs in the format prescribed by OPNAVINST 8010.12F. These allocations are promulgated triennially by letter around 1 July. Significant changes to the allocation are promulgated during the fiscal year.

d. Approves and issues the NCEA to the Major Claimants annually by letter by 31 October.

e. Approves and issues pipeline OWRMR (wholesale) allocations to appropriate SMCA inland depots. These remain under CNO control.

2.3.3.2 FLTCinCs.

a. Review the annual NNOR. Submit to CNO the Fleet's recommended changes to the rationale and/or planning factors contained in the NNOR by 1 May.

b. Submit annual NCER requirements to CNO for the forthcoming fiscal year and 2 out-years by 1 January, along with all other Major Claimants.

c. Submit directions to NAVAMMOLOGCEN for the positioning of PWRMR and NCER stocks allocated monthly by fairsharing (see section 6-4).

d. Submit Fleet annual Load Plan factors to NAVAMMOLOGCEN for each ordnance stock point. (The Load Plan factors are explained in subparagraph 6-5.1.2.).

e. Develop or modify interim and tailored allowance lists for shipfills, mission loads, and cargo loads based on CNO-approved combat requirements and provide a copy to NAVAMMOLOGCEN.

f. Triennially conduct negotiations with the Commandant of the Marine Corps (CMC), or his designated

agent (MARCORSYSCOM), to establish storage requirements for Marine Corps ground ordnance at Fleet controlled storage activities.

2.3.3.3 Commander, NAVAMMOLOGCEN.

a. Annually, subsequent to CNO approval, computes and issues the following.

(1) Issues Ordnance Stock Point Load Plans.

(2) Computes historical consumption rates and asset availability to NCER/NCEA stocks for CNO and FLTCinCs, during the second quarter of the fiscal year.

b. Issues monthly fairshare positioning plan to FLTCinCs based on arrival of new production and maintenance program assets into the inventory.

c. Issues shipfill allowance lists.

d. Issues mission load allowance lists.

e. Issues cargo load allowance lists.

f. Arranges for the distribution, triennially with annual updated listings by DoDIC, of primary, substitute, end-use, and logistic rounds.

g. Conducts triennial negotiations during the first quarter of the fiscal year with the CMC, or his designated agent, to establish storage requirements for U.S. Marine Corps ground ordnance at primary and secondary stock points.

h. Conducts annual negotiations with the SMCA to establish storage requirements for ordnance at SMCA Field Activities.

2.3.3.4 Commandant of the Marine Corps.

a. Conducts triennial negotiations with the FLTCinCs and NAVAMMOLOGCEN to determine storage space for Marine Corps ground ordnance.

b. Submits Marine Corps ground ordnance Load Plan factor for each naval ordnance activity to NAVAMMOLOGCEN annually.

c. Conducts annual negotiations with the SMCA to establish storage requirements for U.S. Marine Corps ground ordnance at SMCA Field Activities.

2.3.4 Requirements Programming.

2.3.4.1 Procurement and Maintenance Requirements. The PEOs and PMs translate the NNOR guidance and Ma-

jor Claimant NCER into specific principal item procurement and maintenance requirements for the POM presentation and budget submittal. In the process, information is gathered by the Acquisition Engineering Agents (AEAs) from a wide range of management studies, data banks, and reports. The programming of gross requirements considers many variables. These include asset status, expenditures, due-ins, allowances, ship offloads, SMCA and organic maintenance capabilities, production data, pricing data, numbers and types of missile launchers/gun barrels not listed in the NNOR, research and development requirements, Special Operations Command (SOC) requirements, etc. These variables are analyzed, interpreted, and used to develop the planning and programming objectives. Their presentation is formally structured by the AEAs to produce documents such as the Material Planning Studies (MPS), Budget Exhibits, and Munitions Procurements and Inventories Studies (MP&IS). Collectively, these documents enable analysis and assessment of current and projected levels of WRMR and NCER asset readiness, help identify assets and deficiencies, provide detailed backup documentation for POM and budget submittals, and present information useful to management and higher level planning and funding authorities. The planning and programming objectives frequently do not coincide, as they represent different levels of support. Program execution is constrained by factors such as asset availability, production shortfalls, changes in force levels and priorities, and resource and fiscal limitations. The SECDEF guidance and supporting NNOR define the total threat, allocate the Navy's share of targets, and compute the level of ordnance required to eliminate these threats. The PEO's and PM's role is to interpret and translate this guidance into specific requirements, develop the POM, formulate the budget, and monitor the allocation of material resources.

2.3.4.2 Fleet Requirements. At the outset of the programming process, inventory and consumption data, as well as allowances lists from the NAVAMMOLOGCEN's CAIMS files, are used in conjunction with the NNOR guidance, the NCER outyear requirements, and other source data to develop Fleet requirements for the budget year, the five years of the POM, and two additional out years.

2.3.4.3 Material Planning Studies. An MPS identified to each principal item is initiated annually before 15 February and is revised with each subsequent budget cycle ASN(FM&C), OSD, and Congressional). The MPS, required by OPNAVINST 8000.14C (NOTAL), provides budget and program backup data, specifies inventory objectives, serves as a basis for detailed procurement and production analysis and planning, provides a means of exchanging requirements and production information with the SMCA, and generally prints a detailed overview of an

item's readiness posture. The MPS covers the prior budget year, the current budget year, and 5 succeeding fiscal years (a time span that corresponds to the mid-range time period covered by the programming system). The MPS tabulates and summarizes the following:

- a. Item identification (DoDIC and nomenclature).
- b. Logistics factors (unit of issue, unit cost, procurement objective by budget year).
- c. Procurement lead time.
- d. Planning and programming objectives for the item by budget year through lead time.
- e. Gains and losses.
- f. Production costs for the item for each budget year.
- g. Current and forecasted material status by fiscal year.
- h. Planning and programming objectives by fiscal year.
- i. Actual assets of the item on-hand and asset location (including in-transit, serviceable, repairable).
- j. Material status in terms of budget and funding periods.
- k. Stock experience (usage) for past two years - an inventory summary taking into consideration gains and losses by reason.
- l. Item retention level.

Inventory status of stocks and inventory gains and losses are incorporated into the MPS from monthly Worldwide Asset and Expenditure Reports compiled in accordance with OPNAVINST 8015.2 (NOTAL) by NAVAMMOLOGCEN. Information and status concerning deliveries and forecasted receipts from contractors is obtained by the

PEOs and PMs from the Production Acceptance Schedules received from the Producers or the SMCA.

2.3.4.4 Budget Exhibit. The budget exhibit is prepared in connection with the budget submission to show the program procurement quantities for the fiscal year. Each exhibit is organized for selected DoDICs and displays the following:

- a. Assets on hand.
- b. Assets due-in from previous fiscal year funds.
- c. Projected usage based on NCEA allocation reports and letters.
- d. Planning and programming objectives.
- e. Budget fiscal year procurement quantities.
- f. Inventory objective by element (Fleet, SOC, pipelines, etc.).
- g. Historical usage reports.
- h. Procurement lead time.

The budget exhibit computations also provide input to portions of the MPS and the MP&IS.

2.3.4.5 Munitions Procurement and Inventories Study. The MP&IS is developed to outline the planning and programming objectives and extend the coverage contained in the budget exhibit through the POM period (e.g., for POM 98, this would encompass fiscal years 97-2002). The MP&IS procurement projections display alternative buy programs as well as the current approved FYDP procurement. These alternatives do not represent constraints based on dollars or priorities, but reflect what is required to reach stated objectives within a given timeframe. In addition to its primary use as budget backup, the MP&IS provides major input to the procurement shopping list portion of the POM.

CHAPTER 2.4

Industrial Preparedness Planning (IPP)

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CHAPTER 2.4

Industrial Preparedness Planning (IPP)

2.4.1 Industrial Preparedness Planning (IPP)

2.4.1.1 General. From the Navy surface ammunition perspective, IPP is a product of the requirements determination process which is provided to the SMCA, not part of the requirements determination process itself.

2.4.2 IPP Planning Concepts. Since the majority of surface ammunition items are acquired by the SMCA, only the SMCA IPP process will be discussed. DoD 5160.65-M contains the SMCA IPP program in detail. The SMCA IPP planners need enough information from the Services to accomplish meaningful planning of the industrial base to support any national emergency on M-day. To fill this need, the Services shall provide valid near-year information and realistic out-year projections to the SMCA. This information will be used to determine production capacity required and to establish and maintain the production base or dispose of capacity no longer required.

a. IPP shall be limited to military end items or components essential to operational effectiveness under combat or combat training conditions, or to the safety and survival of personnel, and meet at least one of the following criteria.

- (1) Requires a long lead-time.
- (2) Requires development of capacity or additional capacity to meet emergency production needs.
- (3) Requires continuous surveillance to ensure preservation of an adequate base to support emergency production needs.
- (4) Requires critical skills or specialized production equipment.

b. Items shall not be selected for planning if they meet at least one of the following criteria.

- (1) Solely for comfort, convenience, or morale.
- (2) Become obsolete within 12 months.
- (3) Normally can be acquired from commercial sources in enough quantities to meet the anticipated needs.

c. If the SMCA determines that an item does not require formal detail planning due to asset posture, insignificant quantities, or commercial availability, the requiring Service will be advised prior to finalization of planning.

d. The Navy and the SMCA shall plan for transitioning of items according to DoD 5160.65-M.

e. Special actions may be needed to qualify or preserve industrial preparedness and surge capability for items from foreign sources. In cases where dependency on foreign sources exists, the SMCA and the Services shall take alternative industrial preparedness measures.

2.4.3 Planning Assumptions. The following assumptions will be used for planning the industrial base under total mobilization conditions.

a. Industrial M-day will be assumed to occur on the first day of the FY being planned.

(1) Necessary funds will be made available for all approved post M-day actions.

(2) In a national emergency, assume environmental restraints are not lifted.

b. The provisions of the Defense Production Act will be strictly enforced and used to direct increased output of current production and to resolve/alleviate material conflicts between civilian and military production through use of the Defense Priorities and Allocation System (DPAS) regulation.

c. Distribution from the strategic stockpile will be available based upon sufficient justification and DoD and Federal priorities.

d. Production equipment, identified and available in the unassigned DoD industrial reserve, will be provided to the requiring activity for installation based on priority of need.

e. The U. S. industrial base is assumed to be undamaged.

f. Foreign producers (other than Canadian) will not be considered as a source of supply.

g. FMS items under U. S. control will be diverted to U. S. forces.

2.4.4 SMCA Responsibilities. The SMCA is responsible for all assigned items of surface ammunition. The basis for IPP is the aggregation of mobilization requirements of the Military Services. Mobilization requirements for IPP are the shortfalls to the inventory objective near term, and future requirements in the out years, when changes to force structure or weapons mix can be projected.

2.4.5 NAVSEA Conventional Ammunition Program Office Responsibilities. The NAVSEA Conventional Ammunition Program Office (PM4) is responsible for the annual submission of surface ammunition procurement requirements to meet mobilization needs. Requirements and asset application are for D+1 month through D+6 months. This data, when combined with similar data from the other

Services, enables the SMCA to effectively carry out wholesale support, acquisition, and IPP for the entire production base through the D- to P-day period.

2.4.6 Replenishment Requirements. Replenishment requirements will be prepared and maintained by the SMCA for the total force, based on annual mobilization requirements stated by the Services. If a new limited force structure, operational plan, or objective is defined, the Services will be requested by SMCA message to provide additional data in the format provided.

2.4.7 Warm Production Base. As peace time production requirements continue to shrink, maintaining a warm production base capable of handling the surge requirements to support any of the mobilization scenarios becomes an increasingly difficult IPP management challenge.

CHAPTER 2.5

Non-Combat Expenditure Program

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CHAPTER 2.5

Non-Combat Expenditure Program

2.5.1 Non-Combat Expenditure Requirements.

2.5.1.1 General. Non-Combat expenditure is the term for all expenditures of ordnance other than for use in combat operations. Typical non-combat expenditures are as follows:

- a. SEA/AIR rescue operations.
- b. Natural disaster assistance.
- c. Security and counter-terrorist operations.
- d. Civil disturbance control.
- e. Illegal drug control.
- f. Emergency explosive ordnance disposal.
- g. Emergency equipment/document destruction.
- h. Ceremonial and the firing of salutes.
- i. Fire power demonstrations and operational missions, such as Explosive Ordnance Disposal (EOD) Team or Construction Battalion projects, as authorized by FLTCinCs or higher.
- j. Training afloat or ashore to maintain a proficiency level of readiness for combat or any of the non-combat operations above (includes match team training and match competition ordnance).
- k. Test expenditures, including RDT&E for out of production ordnance items, ordnance evaluation, and structural test firings.

2.5.1.2 Projection Source. Generally, requirements for a through k are predictable and can be projected for the upcoming fiscal year and 9 outyears. For the other expenditures, prior year actual expenditure data should be analyzed to provide the basis for projecting outyear requirements.

2.5.1.3 NCER Major Claimants. Activity requirements are submitted via the chain of command and consolidated by major claimants for submission to the CNO (due on

1 March annually for the upcoming fiscal year and 2 out-years).

2.5.2 Non-Combat Expenditure Allocation (NCEA).

2.5.2.1 CNO Allocation. Based on the available supply, projected receipts from prior year procurement, and the availability of new procurement funds to meet the Acquisition Objective and the total NCER submitted by all claimants, CNO (N411), in conjunction with the CNO (N7) Resource Sponsors, effects an equitable total annual allocation of each end item to each major claimant.

2.5.2.2 Suballocation. Upon receipt of their annual total NCEA, major claimants suballocate ordnance to their authorized subordinate commands and activities to meet their submitted requirements. For items constrained by available supply or funds, allocations based on need or on a pro-rated basis are made. A major claimant pool for unexpected emergent requirements may be established for allocation on an "as occurring or emergency" basis.

2.5.2.3 Allocation Promulgation. CNO issues annual NCEA by major claimant in June for the forthcoming fiscal year and subsequent outyears.

2.5.3 NCER/NCEA Process.

2.5.3.1 Annual Request. In October, an annual request for submission of requirements for the next fiscal year is included in a letter to each of the NCER Major Claimants containing their NCEA for the current year. (For example, in October 1996, the FY97 allocation of ordnance is issued to each Major Claimant by a CNO letter. Each letter requests the projected FY98/outyear NCER submission by 1 January 1997). Concurrently, the current year allocations are entered into CAIMS.

2.5.3.2 Major Claimant Processing. Upon receipt of the CNO allocation, each Major Claimant issues a similar letter to each of its subclaimants. The letter contains the activity allocation of ordnance for the current year and requests the following year and projected NCER submission by a specific date. At the same time, the suballocations are entered into CAIMS.

2.5.3.3 Suballocation Process. The suballocation process continues down to the individual user activities identi-

fied in CAIMS, with each level dividing up their allocation into suballocations. Items which have been allocated at a level lower than the submitted requirement, are suballocated based on individual management practices. Each claimant in the chain, down to the user, can retain some of his/her allocation for subclaimant emergent requirements during the year, based on individual management practices. Each split of allocations into suballocations is entered into CAIMS.

2.5.3.4 User Activity Processing. Once the user activities receive their allocation letter, they prepare their NCER submission in accordance with CNO NNOR, and training and readiness requirements listed in applicable instructions. The resulting NCER submissions are submitted back up the NCER chain of command, being consolidated at each level, reaching NAVAMMOLOGCEN (N41) by the January deadline.

2.5.3.5 Requisition Submittals. Once each level down to the end user has entered their suballocation into CAIMS, the using activities can submit requisitions against their NCEA for the current FY. Any requisitions submitted prior to the allocation being registered in CAIMS will be back-ordered.

2.5.4 NCER/NCEA Control.

2.5.4.1 CNO and Major Claimants. It is the responsibility of each Major Claimant to ensure that all subordinate commands and using activities are aware that non-combat

requirement submissions must be timely and contain valid/credible requirements for the ordnance needed during the upcoming year and outyears. Expenditures of allocated quantities are closely monitored by CNO and NAVAMMOLOGCEN, not only as a check for over expenditure, but also for chronic overestimation of requirements. As each annual submission is prepared, previous outyear projected requirements should be adjusted to reflect real world environments for annual usage. Since unexpended annual allocations are not authorized for carry-over beyond 30 September, justification or rationale for major increases over prior year expenditures should be annotated on requirement submissions.

2.5.4.2 User Registration. End user registration in CAIMS provides a means for verifying NCEA requisitions and monitoring expenditures versus allocation data. To avoid delays in obtaining required ordnance and to enhance justification for future allocations it is essential that:

- a. End user NCEA registration in CAIMS be accurate and timely.
- b. Changes in allocations and reallocations be registered.
- c. End user Unit Identification Codes (UICs) be specified as the second UIC in requisitions requiring further transfer (FFT) via shore activity or Mobile Logistics Support Fleet (MLSF) ship, and in reporting on Ammunition Transaction Reports (ATRs).

SECTION 3

Acquisition Management

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CHAPTER 3.1

Introduction

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CHAPTER 3.1

Introduction

3.1.1 Scope. DoD 5000 series directives describe the acquisition process and all of its requirements in detail. No attempt will be made to restate those program or acquisition requirements up to milestone III in this document. Some references will be made to RDT&E to describe relationships, but the emphasis and purpose of this volume is to define life cycle management of an ammunition item after successful passage through acquisition milestone III.

3.1.2 Perspective. The primary focus of acquisition management is to manage the acquisition of those ammunition items identified in the Congressionally-approved program within the funded delivery period. The personnel responsible for acquisition management have the most interfaces with other diversified organizations than any of the other management areas. Many acquisition issues are being addressed concurrently with program issues which have significant impact on each other. In the surface ammunition world, the personnel addressing the acquisition issues within the Program Office are the same personnel addressing the related program issues. In procurements identified as high risk, some of the preparatory actions taken towards procurement go for naught and preparatory actions for newly identified procurements are rushed to get them up to the normal procurement timetable.

3.1.3 Organizational Relationships. The organizations involved in acquisition management are predominantly spread throughout the NAVSEA, SMCA, and contractor organizational structures. Figure 3-1-1 identifies the organizations involved in the acquisition processes and their relationships to each other. The following sections in this chapter will describe the acquisition processes and identify the organizational responsibilities for those processes.

3.1.4 Acquisition Reform. The Assistant Secretary of the Navy (RD&A), in a memorandum dated 27 July 1994 (NOTAL), provided policy to fully implement the principles of the DoD acquisition reform initiatives promulgated by SECDEF Policy memo of 29 June 1994 (NOTAL). Four of the reform initiatives apply to ordnance acquisition.

3.1.4.1 Specifications and Standards. Performance specifications shall be used for the acquisition of all new systems, major modifications, upgrades to current systems, and non-developmental and commercial items for programs in any acquisition category. Performance or performance-based specifications are those specifications that define equipment or systems in terms of observable and measurable operational and support characteristics and interfaces that allow the product to effectively and efficiently perform its mission. In cases where a performance specification is not practical, a non-government standard shall be used (non-government standards are those which are industry standards developed to fulfill other than a military need). The use of military specifications and standards is authorized as a last resort, with an appropriate waiver.

3.1.4.2 Contracting. All solicitations not yet released for \$100,000 or greater shall include a statement encouraging contractors to submit alternatives to specifications and standards cited in the solicitations. Contractors with existing contracts over \$500,000 and which have substantial effort remaining shall be encouraged to propose alternatives to the specifications and standards cited in the contract. Only those data requirements which are required by law or add value shall be included in a contract. PMs shall have final responsibility for the data required by the program.

3.1.4.3 Configuration Management. To the extent practical, PMs shall maintain configuration control of functional and performance requirements only, giving contractors responsibility for the detailed design. Configuration requirements shall be prudently tailored to the material item being procured, whether it is developed at government expense or privately developed and offered for government use. Such requirements will be used to control form, fit, and functional characteristics while minimizing design constraints on the contractor.

3.1.4.4 Contract Oversight. Navy activities are directed to reduce government oversight by proposing alternatives to military-unique quality assurance systems. Contractors shall be encouraged to propose alternatives to those cited in solicitations and existing contracts.

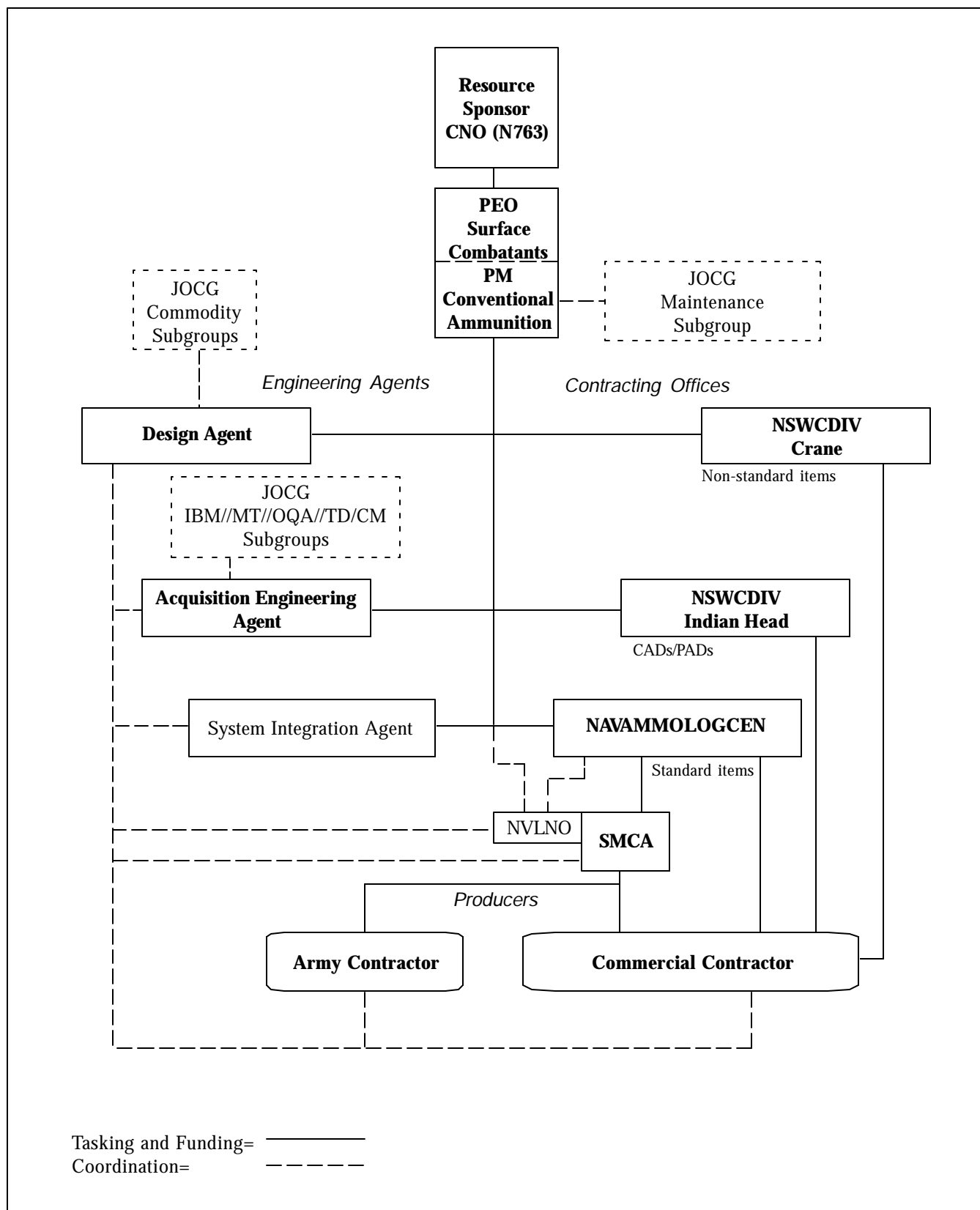


Figure 3-1-1. Acquisition Management Organizational Relationships.

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Acquisition Management

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CHAPTER 3.2

Acquisition Engineering

3.2.1 Acquisition Engineering

3.2.1.1 General. The origin of an ordnance item begins with adapting a basic research breakthrough to an application that meets a military requirement or by a state-of-the-art development that enhances or fulfills a military requirement. An ordnance subsystem concept is prototyped by the fabrication of test models. If tests are successful, models are refined to achieve maximum effectiveness and are stabilized for pilot plant production. Pilot plant production provides sufficient quantities for Technical Evaluation (TECHEVAL) and Operational Evaluation (OPEVAL) under all possible conditions. Upon completion of such evaluations, and upon demonstration that operational safety and general performance parameters have been met, the configuration is Approved for Limited Production (ALP) or Approved for Full Production (AFP). Follow-on Low Rate Initial Production (LRIP) serves to refine the design and confirm the Technical Data Package (TDP). Under certain circumstances, when safety is not a factor and only minor design improvements are necessary, LRIP may be initiated and AFP granted during or upon completion of LRIP. When a military requirement is established for a new ordnance subsystem concept, the Commander, NAVSEASYS COM assigns functions and responsibilities to managers and agents as described in NAVSEAINST 5400.57A (NOTAL). The engineering assignments fall under the following titles.

a. Technical Direction Agent (TDA). A naval activity responsible for direction and development during the conceptual phase and the advanced development stage.

b. Design Agent (DA). Usually the same activity as the TDA, responsible for the final development of a configuration for prototype, LRIP, and full production.

c. Acquisition Engineering Agent. A naval activity responsible for technical and engineering support during development, initial production, and production after AFP.

d. Systems Integration Agent (SIA). A naval activity responsible for systems interface compatibility matters.

Since the TDA and DA assignments are usually to the same activity, combined TDA and DA functions and responsibilities are discussed in this section under the inclusive term of DA.

3.2.2 Engineering Responsibilities. Annually the PM assigns engineering responsibilities for specific ammunition items to specific commands in a Tasking Statement. This Tasking Statement accompanies the annual funding document specifying the authorized use(s) of the funds being provided. Recurring engineering responsibilities are listed under the appropriate title as follows:

3.2.2.1 Design Agent (DA)

a. DAs are responsible for all aspects of development from the conceptual phase to ALP or AFP. During production, DAs assist in production and testing problem areas and participate in production audits, surveys, and conferences. During the in-service and operational phases, DAs review Fleet performance and quality evaluation feedback reports to verify reliability, performance, effectiveness, and maintainability of the original design. DA engineering support responsibilities for the basic design continue throughout the life cycle.

b. In addition to having primary responsibility for development of an ordnance item, DAs are responsible for performance of the basic design throughout the remaining life cycle, including effectiveness upon expenditure. Upon receipt of negative findings to the basic design, the DA is responsible for corrective redesign of existing and future configurations of the item.

c. DAs are generally responsible for product improvement or value engineering design changes, either corrective in nature, or as a result of state-of-the-art advancements.

d. U. S. naval ammunition is designed to be as safe and reliable as possible. Many items contain "fail-safe" or redundant safety features and backup functioning systems. Prior to AFP, extensive tests are conducted at all stages of development and Fleet evaluation. In spite of safety features and extensive testing, ammunition is inherently dangerous and is capable of major malfunctions under certain conditions. Major malfunctions which re-

sult in, or have potential for, causing injury to personnel or damage to equipment are a primary concern to all engineering support activities.

e. The DA's objectives are to attain a zero incidence of major malfunctions. Incidents that occur must be investigated and the cause(s) isolated beyond doubt as not attributable to a defective basic design.

f. Specific DA Engineering Responsibilities.

(1) Design ammunition items or components as directed by the PM to take advantage of new technologies or meet new threats assigned to surface ammunition.

(2) Prepare and update Technical Data Packages (TDPs) for the configuration identification of all assigned ordnance items.

(3) Review and make technical recommendations on contractor-requested waivers or deviations.

(4) Review engineering change proposals incident to production or procurement.

(5) Participate in pre-award surveys, post-award conferences, and product-oriented surveys.

(6) Participate in production line assessment at the contractor's plant.

(7) Develop standard test procedures applicable to first article and acceptance tests.

(8) Participate in analyses and investigations of malfunctions as directed by the PM, and recommend corrective actions.

(9) Develop Product Improvement Programs (PIPs) as directed by the PM to correct design deficiencies or reduce cost for ammunition items contained in the procurement plan.

(10) Develop appropriate disposal procedures for ammunition items under their development and for assigned ammunition items in the inventory whose presently documented disposal procedure is no longer environmentally acceptable.

g. DA Budgeting and Funding.

(1) Budgeted and funded by the PM for production engineering and for product improvement support.

PAN-MC and WPN funds are programmed annually for production engineering for each type subhead scheduled for procurement. Product improvement funds are included only for specific items as appropriate (e.g. 76 mm ammunition). Upon Congressional approval, funds are allocated by the PM to each DA on work request (WR) documents.

(2) Budgeted and funded by the PM for malfunction investigations, including the costs of special tests for determination of failure modes. O&MN funds under the budget line entitled Maintenance Support are budgeted annually based on DA-projected requirements. Upon Congressional approval, funds are allocated by the PM to each DA on Work Request documents.

(3) Budgeted and funded by the PM for engineering support as required for special determinations on safe and environmentally acceptable disposal operations of ordnance. O&MN funds under budget line item Disposal of Ordnance are included when special requirements are projected.

(4) Research and development functions of DAs for ammunition prior to ALP/AFP are budgeted and funded by the PM using RDT&E funds.

3.2.2.2 Acquisition Engineering Agent

a. Upon AFP, engineering responsibility shifts to the AEA. AEAs provide configuration control and production engineering support for manufacturing, loading, and assembly.

b. The AEA is the primary engineering activity for ammunition after AFP. General responsibilities include identifying and controlling ammunition item configuration, and maintaining safety and quality during production.

c. Specific AEA Engineering Responsibilities

(1) Maintain current technical data for the configuration identification of all assigned ammunition items in the Automated Configuration Management Data System (ACMDS) described in section 3-4.

(2) Act as the focal point for coordinating and negotiating with regard to production engineering, product assurance, and configuration management.

(3) Prepare and issue Automated Data Lists (ADLs) for items requiring procurement.

(4) Review and approve, based on DA concurrence, contractor-requested minor waivers or deviations.

(5) Refer major and critical waivers and deviations to the PM and maintain a record of all waivers and deviations for assigned ammunition.

(6) Develop a TDP priority list for DA preparation, and review TDPs prepared by the DA.

(7) Review and record engineering change proposals incident to production or procurement.

(8) Participate in production line assessment at the contractor's plant.

(9) Help develop and coordinate standard test procedures applicable to first article and acceptance tests.

(10) Coordinate the development of the schedule identifying the planned procurement of items for Navy and FMS which will require DA design and engineering support in the out years.

(11) Approve and assign numbers to DA prepared hazardous component safety data statements (HCSDS) relating to new items.

(12) Provide operations research and statistical analysis services to support the acquisition process, including requirements determination.

(13) Furnish the contracting office with accurate and current data required for the preparation of procurement documents.

(14) Review all procurement technical data from DAs for uniformity, adequacy, completeness, and continuity.

(15) Provide engineering services incident to production, including preproduction design review for producibility, value engineering studies, and technical guidance on pilot production design validation.

(16) Provide Procurement Data Packages (PDPs) to the contracting office for component procurement.

(17) Develop the Configuration Identification Status Report (CISR).

(18) Perform configuration audits of items under procurement.

(19) Prepare listings of equipments used during acceptance inspections and review gage designs for accuracy in accordance with SECNAVINST 4855.3A.

(20) Manage configuration control of new items in the low rate initial production program in order to validate accuracy of technical data prior to full production.

(21) Participate in pre-award surveys, post-award conferences, and product-oriented surveys.

(22) Coordinate or participate in analyses and investigations of major malfunctions, and recommend corrective actions to the PM.

(23) Manage and maintain the ordnance gage program.

(24) Implement the Performance Standards Program (PSP).

(25) Ensure that MIL-STD-1168 and MIL-STD-1167 are complied with by all activities engaged in future acquisition and maintenance of surface ammunition.

(26) Provide detailed instructions for the correct use of manufacturer's identification symbols, interfex numbers, sizes of ammunition lots, data card content, and distribution to all activities concerned for new procurement and maintenance of surface ammunition.

d. AEA Budgeting and Funding.

(1) Budget and funded by the PM for production engineering. PAN-MC and WPN funds are programmed annually for production engineering for each type subhead scheduled for procurement. Upon Congressional approval, funds are allocated by the PM to the AEA on Work Request documents.

(2) Budgeted and funded by the PM for malfunction investigations. O&MN funds under the budget line entitled Maintenance Support are budgeted annually based on AEA-projected requirements. Upon Congressional approval, funds are allocated by the PM to the AEA on Work Request documents.

3.2.2.3 Systems Integration Agent.

a. The SIA is the primary engineering activity responsible for coordinating the engineering efforts in one area with the other two, to ensure compatibility and interoperability. The three areas are:

(1) Gun ammunition.

(2) Gun systems.

(3) Ammunition handling systems.

b. Specific SIA Engineering Responsibilities.

(1) Identify and ensure ballistic compatibility between ammunition sub-assemblies.

(2) Determine interface requirements to provide ballistic compatibility between the ammunition and other gun and fire control systems.

(3) Advise the PMs of interface problems and recommend solutions.

(4) Review all lot acceptance and First Article gun ammunition tests to quantify the contribution of ammunition related errors to total gun weapons system performance.

(5) Review gun ammunition waivers, deviations, and engineering change proposals for their impact on ballistic compatibility and system performance.

c. SIA Budgeting and Funding. Budgeted and funded by the PM for production engineering and for product improvement support. PAN-MC and WPN funds are programmed annually for production engineering for each type subhead scheduled for procurement. Product improvement funds are included only for specific items as appropriate (e.g. 76 mm ammunition). Upon Congressional approval, funds are allocated by the PM to the SIA on Work Request documents.

CHAPTER 3.3

Procurement

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CHAPTER 3.3

Procurement

3.3.1 Procurement

3.3.1.1 General. Procurement is under the management control and policy guidance of the PM, and is a product of the planning, programming and budgeting cycle, and the requirements determination process.

3.3.1.2 Line Item Requirements. The surface ammunition line item requirements incorporated into the annual POM and into the subsequent phases of the budget evolve from the planning objectives mandated by the annual OSD and CNO guidance. These requirements are qualified by constraints in funding, production capabilities, altered priorities, or other changes. Also, the computed buy quantities are sometimes spread over a longer period of time than initially planned in order to maintain a "warm production base." They may also be deferred to take advantage of economical buy opportunities through consolidation of procurements. Because of these and other inhibitors, a variance often exists between the targeted planning objectives and the programmed objectives for which funding ultimately is approved and allocated.

3.3.1.3 Programmed Procurement. The programmed procurement is the "buy" quantity of items required to:

- a. introduce new or replacement items,
- b. fill combat material requirements in support of mobilization scenarios in the SECDEF guidance,
- c. secure component support of end item maintenance, or
- d. support the Major Claimants' projected peacetime expenditures.

3.3.1.4 Buy Quantity Resolution. During the period from POM initiation through Congressional approval and the final allocation of funds, funding requirements for material support undergo changes before the procurement buy quantity is resolved. The approved and funded procurement quantity represents that portion of the total item requirement which cannot be satisfied from existing assets by maintenance actions or reclamation.

3.3.2 Procurement Responsibilities

3.3.2.1 Resource Sponsor

- a. Provides resource management, policy, overall monitoring, and direction for the use of funds in procuring ammunition.
- b. Provides coordination with other resource sponsors in developing a consolidated budget submittal to best meet the needs of the Fleet.
- c. Oversees the development, coordination, and justification of the requirements stated in the POM and budget submittals.

3.3.2.2 Program Manager

- a. Provides program management, policy, overall monitoring, and direction for the procurement of ammunition.
- b. Develops, coordinates, and justifies the requirements stated in the POM and budget submittals.
- c. Provides peacetime, surge, and mobilization requirements and priorities to the SMCA.
- d. Approves and submits to the SMCA, twice annually (in December and May) the Navy's Conventional Ammunition Plan (CAP), for SMCA-assigned items.
- e. Develops a procurement shopping list consistent with the logistics guidance, based on requirements and asset data.
- f. Allocates, as appropriate, PAN-MC and WPN funding for procurement and production.
- g. Provides procurement data packages and funds by MIPRs to support requirements for supply, purchase, production, and first destination transportation.
- h. Allocates, as appropriate, O&MN funding and work request orders to accomplish in-service engineering functions incident to procurement.
- i. Reviews, and when appropriate, approves contractor requested or recommended waivers and deviations which are classified as major or critical.

j. Makes decisions as to procurement of economical buy quantities.

k. Provides guidance to the In-Service Engineering Agent (ISEA) concerning their in-service engineering responsibility for production items.

l. Arbitrates and resolves engineering and technical disagreements between the Acquisition Engineering Agent (AEA) and the cognizant Design Agent (DA).

m. Reviews critical or interfacing engineering change proposals (ECPs) affecting items in production.

n. Initiates LRIP buys for new or improved ammunition prior to full production procurement.

o. Procures items such as specialized small arms ammunition on commercial contracts through NAVAMMOLOGCEN or NSWCDIV Crane.

3.3.2.3 Design Agent (DA). DAs are assigned engineering and design responsibilities. This includes development and maintenance of design documentation for new or modified ammunition items (including support equipment) under their respective cognizances. Specific responsibilities and assignments are in section 3-2.

3.3.2.4 Acquisition Engineering Agent (AEA). The AEA is assigned engineering responsibilities for procurement and production. Specific responsibilities and assignments are in section 3-2.

3.3.2.5 Systems Integration Agent (SIA). The SIA is assigned engineering compatibility responsibilities. Specific responsibilities and assignments are in section 3-2.

3.3.2.6 NAVAL AMMUNITION LOGISTICS CENTER, MECHANICSBURG, PA. (NAVAMMOLOGCEN)

a. Acts as procuring agent for ammunition procured through the SMCA.

b. Collects, records, and maintains the supply, technical, and historical data essential to the procurement process.

c. Prepares and forwards funded MIPRs to the SMCA as directed by the PM.

d. Collaborates with the PM and other activities in the formulation of the follow-on CAP and associated CISR documentation.

e. Tracks and monitors procurements placed with the SMCA and provides status.

f. Generates MILSTRIP prepositioned material receipt cards to alert consignee activities of shipments due-in from military and contractor production facilities.

g. Provides periodic reports of overdue shipments.

h. Amends or terminates procurements as directed by the PM.

3.3.3 Full Scale Production/Limited Production.

3.3.3.1 Transition to the SMCA. The bulk of the Navy's ordnance is developed by the Navy and procured by the SMCA. Because of the user/SMCA relationship, DoD 5160.65 of 08 March 1995 (NOTAL) requires close collaboration between the PM and the SMCA throughout the development stages of an ammunition item. The purpose of such collaboration is to establish the groundwork for the transitioning of the item to SMCA for full scale production after development and completion of TECHEVAL and OPEVAL. Transition Plans are developed in accordance with DoD 5160.65-M. New items which achieve baseline stability and can be supported by fully developed technical and configuration documentation are certified by COMNAVSEASYS COM as AFP. ALP is provisionally assigned as a means of obtaining an approval for a limited quantity of items when all operational or performance requirements have not yet been achieved. Pending such, these items are not transitioned to the SMCA. In some instances after AFP, the PM may elect for technical reasons, or in consideration of budget constraints, not to enter immediately into full scale production. In such cases the item is procured on a LRIP basis to verify producibility, complete first article tests, and validate the technical documentation. LRIP can be initiated either prior to or after transition to the Single Manager, based on managerial judgement. When the new item is transferred and SMCA institutes LRIP on behalf of the Navy, close collaboration between the SMCA and Navy is maintained.

3.3.3.2 Other Procurement Sources. Although procurement of the Navy's ammunition needs for SMCA-assigned items is the responsibility of the SMCA, the PM will arrange for procurement of limited quantities at Navy activities on occasion. This usually occurs in cases where small quantity procurement by SMCA is not cost-effective. These procurements will be executed by a NAVAMMOLOGCEN or NSWCDIV Crane commercial contract as directed by the PM.

3.3.4 Procurement Plan.

3.3.4.1 Conventional Ammunition Plan. Requirements determination and the associated POM development processes isolate and identify those ammunition items which are required to be procured to satisfy the inventory objectives to support the combat and training requirements. Lists of prospective items for procurement are submitted with the unconstrained preliminary POM in October and undergo review and approval concurrently with the POM. With the preparation of the POM for higher level review and approval, COMNAVSEASYSKOM begins coordinating its projected procurement needs with the SMCA. In December the PM prepares the initial CAP (JCAP Form PP-2 with data). This document is submitted to the SMCA with copies to the AEA and NAVAMMOLOGCEN and reflects the requirement for each line item for the POM period. The SMCA consolidates all of the submitted CAPs into the Integrated Conventional Ammunition Procurement Plan (ICAPP). Since the December CAP submittal represents the requirements contained in the unconstrained POM concurrently undergoing review, it is a tentative submittal subject to change as the POM changes. The December CAP serves the following functions.

a. Provides NAVAMMOLOGCEN with advanced information concerning projected procurements for the following fiscal year.

b. Alerts the AEA to new planned production for which action must be coordinated with the cognizant DA to commence development of the required PDPs in anticipation of procurement in the near term.

c. Triggers a chain of collaborating actions among the AEA, NAVAMMOLOGCEN, the DA, and the SMCA to further define material requirements data needs and procurement strategy.

d. Enables the AEA to develop the CISR which includes each end item and a breakout of its components, test equipments, pallets etc., and an analysis of sources of acquisition (i.e. from inventory, procurement, or assembly at Navy or SMCA LAP activities).

e. Enables the AEA to identify changes in previously submitted requirements statements and to take corrective action.

f. Provides the SMCA with information concerning the Navy's forecasted procurement needs. This information enables SMCA to review and price-out the projected quantities, assess production and delivery capabilities, and identify possible slippages or production

problems. The CAP contains specific sections reserved for comments which must be completed by SMCA after review and returned to the Navy PM. Included in the information indicated on the returned CAP are source of supply (commercial purchase or Army stocks), price and availability, lead time, minimum procurement quantity, etc. The annotated CAP also assigns a significant control number to be cited in future transactions applicable to the specific item. NAVAMMOLOGCEN uses the annotated CAP to determine pricing and lead times for prospective procurements from SMCA for which MIPRs will be required.

3.3.4.2 Procurement Planning Meeting. Based on the approved POM and the information provided by the SMCA on the annotated return copy of the initial CAP, and prior to the May CAP resubmittal, the AEA convenes a procurement planning meeting with the SMCA, PM, and NAVAMMOLOGCEN. The purpose of this meeting is to review and analyze each line item projected for procurement, define the technical data required, identify potential problem areas, develop and finalize the CISR, and achieve consensus on procurement strategy.

3.3.4.3 Funding Risk Assessment. The PM's submittal of the May follow-on CAP represents the programmed quantities currently identified in the POM. It reflects the pricing information and other data provided earlier to the PM and NAVAMMOLOGCEN by the SMCA or obtained during the procurement planning meeting. The May CAP also indicates by item the level of risk associated with the funding proposed for the budget and following two fiscal years. These levels are:

a. Low risk - the item is a requirement for which there is little or no doubt funding will be received.

b. Moderate risk - the item is a requirement for which there is an even chance of receiving funds.

c. High risk - the item is a requirement for which there is doubt that funding will be received.

3.3.4.4 CAP Supplemental Documents. Two important documents are provided to the SMCA to supplement the information in the May CAP: the CISR for end item related components, and the PDP. Both the CISR and PDP are funded and submitted to the SMCA early in the procurement process to enable timely solicitation, leading to formal award of contract the following fiscal year.

3.3.4.5 SMCA CAP Response. For the May submission, the SMCA will return the completed CAP information to the PM within 30 days of all required pricing information

being received (i.e., the CAP from the PM, OSD approval of support costs/CAWCF surcharges and updated inflation indices). The August and December submissions update this information. Prices become fixed for the budget year with submission of the President's budget (the December submission). The SMCA response includes the following.

a. Aggregating all Service requirements submitted and publishing a consolidated "price list," within 45 days of receipt of all pricing information. This will show levels of risk assigned by the Services, proposed fixed standard prices for the next budget year and the fixed standard prices for the previous fiscal years of the biannual budget.

b. Providing, in writing as soon as possible, any information that may impact the PM's planned acquisitions or deliveries including: production problems affecting deliveries; product improvement programs that may cause delays; development of a backlog in deliveries that could prevent delivery within the funded delivery period; decisions affecting the production base, such as closing a line or a one time or final buy of components; or any other situation that impacts the customers' delivery dates, funding or budgeting.

c. Developing budget support documents (Production Schedule, Procurement History and Planning, and Ammunition Cost Analysis) and furnishing them to the customer with the CAP. The PM should expect delivery as shown on the Production Schedule. If this is unsatisfactory, the PM can request a change by separate correspondence.

3.3.4.6 Production Schedule. This exhibit is produced by the DCS for SMCA. It displays the monthly delivery schedule for all undelivered prior year orders, and current year, budget year and first program year orders. Also shown are procurement leadtimes and manufacturer's data. Leadtimes vary from item to item and are based on the developing contractor, engineering, like item procurement, history and expected date of funding (normally 1 October of the fiscal year). The delivery order schedule is normally based on the component having the longest procurement leadtime. This item is called the pacing component. The manufacturer's data includes the name, location and production rates for current and planned manufactures.

3.3.4.7 Procurement History and Planning. This exhibit is initiated by the DCS for SMCA CAWCF Pricing Branch in conjunction with information provided by the production manager. The Procurement History and Planning breakout is modeled after the Four Year Ammunition Cost Analysis and requires the prior year (or last actual procurement year), current year, biennial budget year 1 and bien-

nial budget year 2 data. The prior year can differ between the Ammunition Cost Analysis and the Procurement History and Planning. If there is no requirement for the prior year on the Ammunition Cost Analysis, that column will be blank. If the column is blank, the prior year on the Procurement History and Planning may reflect a previous year's program information not to exceed three years prior.

3.3.4.8 Ammunition Cost Analysis. This exhibit displays the program cost breakdown and is submitted to the Services. It consists of a local use cost analysis worksheet and a 4 year cost analysis. The local use worksheet provides a cost analysis for all elements of the end item for the 8 year period shown in blocks a-h of the CAP form. The cost categories on the Ammunition Cost Analysis exhibit represent a number of elements that must be tailored to adequately depict the ammunition item. The categories include hardware, production support, CAWCF surcharges, and non-recurring costs. From the worksheet, a 4 year ammunition cost analysis is produced and sent to the customer. The 4 year cost analysis provides all element costs of the end item for prior year, current year, budget year 1, and budget year 2 as shown in blocks a-d of the CAP form. These costs are validated by the CAWCF Management Division.

3.3.4.9 Integrated Conventional Ammunition Procurement Plan. The DCS for SMCA also generates the ICAPP which contains much of the consolidated Service information contained in the SMCA CAP response. The ICAPP is used by the IOC to support the CAWCF budget reviews by the Services, DoD, and Congress.

3.3.5 Conventional Ammunition Plan Transmittal System. The Conventional Ammunition Plan Transmittal System was developed by the Marine Corps Research, Development, and Acquisition Command, Washington D.C. as an automated means of transmitting the CAP (PP2) documents. The system has been given to FMSO to incorporate enhancements and maintain the system for all Services. The system was developed to provide the Services and SMCA with an automated method of creating, updating, and producing CAPs in an efficient and expeditious manner. Additionally, the system was developed to provide the customer the tool needed to produce a quality output product (CAP Form), that is utilized to provide procurement information between the SMCA and the customer.

3.3.5.1 Computer Equipment. The CAP transmittal system can be loaded on any IBM-compatible computer with modem or local area net connectivity for file transfer with the SMCA at Rock Island, IL.

3.3.5.2 Execution Options. The CAP main menu provides for the selection of eight sub-menus. They are:

- a. Setup.
- b. Maintenance.
- c. Add/Edit.
- d. View P-Forms.
- e. Delete.
- f. File.
- g. Reports.
- h. Utilities.

3.3.5.3 Completing CAP. The CAP is completed by the PM and forwarded to the IOC for processing. The EDCA also receives a copy for compiling information for long range planning. Submission of the CAP is now done electronically with hard copy follow-up only when required. Guidance for electronic submission is promulgated by the EDCA as required.

3.3.6 Military Inter-Departmental Purchase Requests

3.3.6.1 Funded Procurement MIPRs. After the PPBS stages, the actual procurement of ordnance begins with Congressional approval of the budget and subsequent allocation of funds to COMNAVSEASYSCOM by the C,DoN. After receiving funding through STARS, the PM allocates the PAN-MC funds to NAVAMMOLOGCEN in the form of allotment authorizations for the purchase of ammunition material. The authorizations include instructions concerning the item quantities and configuration(s) to be procured. Based on the allotment authorizations, NAVAMMOLOGCEN prepares a MIPR for submission to SMCA which cites the signal and fund codes and the appropriation. The SMCA does not commit, obligate, or expend funds against any MIPR that exceeds the total funds committed on the MIPR. Further, the SMCA accepts only those MIPRs whose funds can be obligated within the life of the appropriation.

3.3.6.2 MIPR Acceptance/Rejection. Within 30 days after receipt of a funded MIPR, the SMCA formally indicates acceptance or rejection by execution of a DD 448-2, Acceptance of MIPR. If it becomes known after notification of acceptance that the price may not be maintained, the SMCA will resolve the price differential with the PM.

3.3.7 Conventional Ammunition Working Capital Fund. The IOC, as SMCA's Procurement Contracting Officer (PCO) for ammunition items, consolidates the Services' funding through the use of the CAWCF. This fund was established on 1 October 1981 for financing, managing, controlling, accounting, and reporting the procurement and assembly of conventional ammunition.

3.3.7.1 CAWCF Responsibilities.

a. The C,DoD is responsible for the financial and budget policy and direction applied to CAWCF operations. The Assistant Secretary of Army, Financial Management (ASA(FM)), is responsible for regulations and guidance for the financial operations of the CAWCF.

b. The CAWCF Management Council is the Joint Service governing board that reviews CAWCF performance and recommends changes in policy, procedures, management, and pricing to the C,DoD.

c. The EDCA is the executive agent for establishing Joint Service CAWCF policy and procedures; coordinating with the CAWCF Management Council, Service PMs, and Service Resource Managers; and providing coordinated CAWCF guidance to the IOC.

d. The Deputy Chief of Staff for Resource Management (DCSRM), Headquarters, AMC, provides accounting and financial reporting policy direction for the CAWCF and regulations for an accounting system, meeting appropriate standards of accounting accuracy for CAWCF operations.

e. The Deputy Chief of Staff for Ammunition (DCSA), Headquarters, AMC, provides program and budget guidance for Army conventional ammunition programs and oversees preparation and submission of the CAWCF budget.

f. CAWCF Management Division. The CAWCF Management Division of the DCS for SMCA, IOC, performs as the PM for all assigned CAWCF programs. They perform all CAWCF financial management for the SMCA as delegated by the CG, IOC to include planning, programming, budgeting, and execution of the CAWCF program.

3.3.7.2 Operating Concepts. The CAWCF will finance, on a consolidated basis, the annual ammunition program requirements of all customers of the SMCA. Operations are conducted in accordance with DoD 7220.9-M and within guidelines and regulations applicable to Army financial operations. Additional policies are specified by the

Executive Office of the President (OMB) and OSD. Operations of the Fund will be controlled by the Department of the Army subject to the approval of operating budgets by C, DoD.

a. The CAWCF will be operated on a break-even basis, recognizing that in any fiscal year there may be a gain or loss. The CAWCF will be operated on a reimbursable basis. Financial transactions will be initiated each fiscal year within the reimbursable authority. Orders accepted into the CAWCF for common items, remain valid until performance by the CAWCF is complete. Common orders are defined as those with valid stock numbers. Orders for developmental items or for services expire when the customer's appropriation expires. Obligations based on anticipated orders are not authorized.

b. Budget documentation, as required by OSD/OMB and Congress for procurement appropriations and the CAWCF, will be based on DoD 7110.1-M and the annual OSD budget call letters. Budget submissions for the CAWCF will be in accordance with revolving funds budget submission procedures and will be based on anticipated orders by the Services and other Federal agencies and an estimate of international logistics procurement.

3.3.7.3 Pricing Concepts. The CAWCF operates under two pricing concepts: Fixed Standard Prices (FSP) and actual cost.

a. FSP. FSP orders are established exclusively for DoD and Coast Guard customers. They provide a known price for budget planning and remain valid through execution of orders in the CAWCF. They include estimated material costs based on the latest acquisition cost plus inflation and surcharges to cover support costs and gain/loss to the fund. Procedures for developing and changing FSPs are contained in DoD 5160.65-M, chapter 6. Once prices are fixed for the budget year with submission of the President's budget, they can be changed on a case-by-case basis only with the approval of C, DoD.

b. Actual Cost Orders. Actual cost orders apply to non-DoD federal government customers (except the U.S. Coast Guard), private contractors and FMS customers, and to DoD customers requesting SMCA procurement of RDT&E and LRIP items which have not transitioned to SMCA responsibility. Customers will be furnished an estimated cost price and will be billed on the basis of actual cost. Price adjustments will be made as required based on actual costs during the execution of the order. Customers will provide additional funds as needed and any excess funds will be returned to the customer.

3.3.7.4 Gain/Loss Surcharges and Support Charges. Gain/Loss surcharges and support charges will be applied uniformly using total hardware cost as the base price. The gain/loss surcharge is applied to each order to maintain a break-even position for the CAWCF. It reflects recouping from previous years and it may be positive (to recoup losses) or negative (to return gains). The operating gain/loss surcharge will be calculated separately for each fiscal year's FSP program, based on actual and anticipated financial performance of the CAWCF. C, DoD will determine the support and gain/loss surcharges to be applied for the next budget year, based on IOC analysis and recommendations. This analysis is presented first to the CAWCF Management Council which will determine the Joint Service position to be presented for C, DoD review. The surcharge recommendation is presented to C, DoD at the CAWCF mid-year review, normally held in May. C, DoD will publish the approved support cost and gain/loss surcharges for the CAWCF Management Division in time for CAWCF and Service budget submissions. Support cost charges to be included are as follows.

a. Production Engineering includes expenses related to production engineering for items in current production. This surcharge is not placed on Navy procurement of items for which the Navy was the developing Service.

b. Quality Assurance includes expense incurred in quality assurance for CAWCF production items, industrial stocks, and FAT.

c. Acceptance Testing includes expenses incurred in proof and acceptance testing of CAWCF items, including material and production costs for items consumed in testing.

d. Transportation includes expenses incurred in packing, crating and handling during the movement of CAWCF-owned stocks, and transportation of material returns to the CAWCF's custody and ownership.

3.3.8 Contract Award

3.3.8.1 Preaward Survey. Based on the advanced planning data contained in the CAP, PDPs, and other documentation, IOC prepares bid packages and initiates contract solicitation. After receiving the funded MIPRs from NAVAMMOLOGCEN citing the PM's requirements, IOC proceeds to award of contract. If on-site inspection of prospective contractors is necessary, the PCO may arrange a pre-award survey of the contractor's facilities and equipment. The Navy ISEA and DA (or other Service representative if the Navy is not the developing Service) will assist

and advise the PCO as to the technical capability of the contractor.

3.3.8.2 Post-award Conference. The PCO, the Contract Administration Officer (CAO), the contractor, or the PM/AEA may request and participate in post-award for first time award to a contractor. This may be requested if difficulties were experienced in previous procurements of the item, or there exists a high risk of failure due to item complexity, urgent delivery schedule, or technological considerations.

3.3.8.3 Quality Assurance Letter of Instruction (QALI). After contract award, the PCO invites the requiring Service and CAO to participate in quality assurance conferences. Prior to production, the AEA has responsibility for ensuring that the contractor and CAO understand and are capable of complying with the requirements for quality assurance and on-line inspections. To ensure this understanding, the AEA prepares and submits to the IOC the Quality Assurance Provisions (QAP) applicable to the procurement article. From this document, the IOC prepares the QALI. The requirements in the QALI are for guidance of the CAO and specify mandatory sampling inspection and test instructions. In-conference orientation and familiarization instructions regarding the quality control requirements of the contract are provided to CAO personnel having on-site review authority. This meeting provides opportunity for exchanging information regarding existing or anticipated problems.

3.3.8.4 Government Load, Assemble, and Pack (LAP). Explosive, incendiary, and dangerous ammunition items are usually not delivered by the contractor fully loaded or assembled except for small arms ammunition. IOC contracts for the various components that constitute the end item and arranges for their explosive LAP at specified Army Ammunition Plants or IOC activities such as Hawthorne, Crane, or McAlester.

3.3.9 Procurement Status

3.3.9.1 Procurement Cancellation. When all or any part of the quantity requested in a MIPR is to be canceled, the PM, via NAVAMMOLOGCEN, will notify the IOC who advises concerning termination charges. If, after examining the charges, the PM determines that termination action is to be pursued, NAVAMMOLOGCEN will submit an amendment to the MIPR directing termination.

3.3.9.2 MIPR Reviews. In accordance with a mutually agreeable schedule, IOC and the PM conduct semiannual MIPR reviews. These reviews address, but are not limited to, funding, delivery, production, scheduling, billing and

payments, lead time, program projections, and processing methods. Billings for both advance and progress payment requests are submitted by IOC on SF 1080. All significant changes that affect the contents of a MIPR must be processed by NAVAMMOLOGCEN as formal MIPR amendments (DD Form 448). These include changes in quantity, prices, funds, National Stock Number (NSN), part or drawing number, specification, delivery schedules, and engineering changes. No formal MIPR amendments are required for nontechnical, minor, or administrative changes such as shipping or destination, or clarification of item description or component entities. These are communicated to the IOC by mutually acceptable means.

3.3.9.3 Procurement/Renovation/Production (P/R/P) File. As IM, NAVAMMOLOGCEN maintains, in CAIMS, a central P/R/P status file for ordnance items. This file provides a mechanized record of internal and external procurement and maintenance actions from the time of receipt of allotment authorizations from the PM until material delivery has been completed. For external procurements, NAVAMMOLOGCEN relies on the PM to provide procurement action status as it occurs to maintain an accurate and complete database. The file record's item nomenclature, DODIC/stock number, applicable funding and MIL-STRIP numbers, applicable procurement document numbers, and delivery schedules are loaded in the file when MIPRs are accepted and when contracts are awarded. NAVAMMOLOGCEN therefore has document tracking capability which enables it to keep up-to-date status on each procurement and maintenance MIPR and its contract delivery requirements.

3.3.9.4 Procurement and Production Status (PPS) File. The Navy AEA maintains a status file which receives information from the P/R/P file at NAVAMMOLOGCEN, as well as additional information entered by the AEA personnel on production actions and problems. This file provides more detailed information on production status for the PM and AEA to properly manage their procurement programs.

3.3.9.5 DRSMC Form 38s. DoD 5160.65-M requires IOC to furnish monthly delivery status reports on DRSMC Form 38s to the requiring Service. These reports show the progress of items being acquired or produced. These reports contain the requirements schedule, current forecast schedule, quantity currently available, and the cause of delay or slippages. These forms are sent by the supply personnel in the IOC to NAVAMMOLOGCEN who distributes them to the appropriate PMs.

3.3.9.6 Prepositioned Material Receipt Cards (PMRCs). NAVAMMOLOGCEN's loading of delivery schedules from the Form 38s into the CAIMS procurement files en-

ables the establishment of due-ins and the generation of PMRCs to prospective receiving field activities. For items not being delivered by the SMCA, NAVAMMOLOGCEN relies on the activity assigned by the PM to provide the required delivery schedules for entry into CAIMS. New PMRCs are forwarded whenever delivery schedules are changed or updated. This is often the only advanced notice of incoming assets that an activity gets for receipt and stor-

age personnel workload planning.

3.3.9.7 DRSMC Form 45s. The IOC also utilizes DRSMC Form 45s within the DCS for SMCA. This form shows the actual production schedules at the IOC and contractor facilities. These forms are available to the NVLNO, Navy PM, and AEA to obtain additional information not contained on the DRSMC Form 38.

CHAPTER 3.4

Configuration Management

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CHAPTER 3.4

Configuration Management

3.4.1 Configuration Management

3.4.1.1 General. Configuration Management direction for DoD procurements has been consolidated in MIL-STD-973. Configuration management is an all-important discipline.

a. It integrates the engineering technical and administrative actions required to identify, document, maintain, and monitor the functional and physical characteristics of an item during its life cycle.

b. It controls and records the status of all changes proposed to configuration items (CIs) and their related documentation.

c. It facilitates continuity and direction during design, production, operation, and maintenance to ensure that the item is what it was meant to be throughout its life cycle, and that all supporting technical documentation represents that item.

3.4.1.2 Configuration Evolution. The configuration of an ammunition end item is determined during design, derived and proven during development, established during production, and maintained during operation and support. The concept is simple; implementation is time-consuming, complex, and iterative. The evolution of a typical CI usually involves the following repetitive sequence of events:

- a. Identify what is to be produced.
- b. Operate and test.
- c. Control changes.
- d. Re-identify.
- e. Produce.
- f. Control changes.
- g. Re-identify and modify.
- h. Operate and test.

i. Control changes.

j. Re-identify and modify.

k. Operate and maintain concurrently with follow-on production to end of life cycle.

3.4.1.3 Configuration Regulation. The basic policy for configuration identification and management in the Navy is contained in MIL-STD-973. Configuration control of in-service ammunition items, although discussed in section 4-1 of this manual, predominantly refers back to this chapter. The steps of configuration management will be covered starting with those involved in item identification, then item control, item status accounting, and item audit.

3.4.2 Configuration Identification. The purpose of configuration identification shall be to incrementally establish and maintain a definitive basis for control and status accounting for a CI throughout its life cycle. Item identification begins with the generation of the components of the PDP.

3.4.2.1 Procurement Data Package. The PDP is the technical documentation submitted to the IOC for use by the PCO. The PDP components are as follows.

a. Technical Data Package. All documents prepared by the DA necessary to identify the technical aspects of the product. These documents include required drawings and Military, Federal, and joint Service specifications and standards, etc.

b. Contract Data Requirements List (CDRL). The CDRL is a listing prepared by the AEA to identify the standards and specifications required in the contract for proper production and acceptance of the end item and its components.

c. Quality Assurance Provisions. These provisions identify the specific inspection actions to be accomplished by the government QA representative prior to acceptance of material. This will include Preaward Surveys (PAS), Postaward QA Conferences, First Article Acceptance Testing (FAAT), and any other conference, survey, audit, or review requirements.

d. Acceptance Inspection Equipment (AIE). Lists equipment such as a tabulation of gages required for certification and acceptance of ammunition items.

e. Configuration Management Plan (CMP). The CMP describes the processes, methods, and procedures to be used to manage the functional and physical characteristics of the assigned CI.

f. DD-254 Security Classification Requirements. These requirements contain security classification of CI and associated requirements. Refer to section 7-2 for further explanation.

g. DD Form 448 standard contract clauses.

h. Aperture Card Inventory List (optional).

i. PDP Checklist/Return Receipt.

3.4.2.2 Technical Data Package. Preparation of the TDP is a prerequisite to obtaining AFP and is accomplished for all development items. The standardization of documentation is essential for the transitioning of items to SMCA and for developing and maintaining the PDPs to support procurement. The TDP will contain those drawings, standards, and specifications needed to manufacture, package, ship, maintain or renovate, and accept a CI. The technical data in the TDP is incorporated into ACMDS and upon AFP defines the product baseline. Changes from the product baseline are substantiated by approved waivers, deviations, ECPs, and ADL change notices.

3.4.2.3 Automated Data List. The AEA, in coordination with the DAs, prepares an ADL which identifies and describes the production configuration of each item introduced into the ammunition supply system. Each ADL contains a listing of its pertinent drawings, specifications, standards, provisions, and requirements used as the current baseline for procurement, loading, and maintenance. The ADL also identifies the ADLs of each of the item's subassemblies, support equipments and test sets. Each ADL is uniquely numbered to apply to one specific line item configuration. This number is the same as that assigned to the assembly or top level drawing for the item. The basic number is suffixed for each modified version and is recorded in ACMDS. This number is used as reference throughout the procurement process and is cited in the procurement contract and on MIPRs prepared by NAVAMMOLOGCEN. A copy of the ADL for each item is forwarded to the IOC concurrently with the December CAP submittal. It is also included in the PDP forwarded subsequent to the May submittal. In addition to its use as a control document, the ADL provides basic technical data

for the formulation of ammunition data cards for intra-Navy use as described in paragraph 3-3.4.

3.4.2.4 Classification of Characteristics (CC). A CC analysis is conducted by the DA and an appropriate CC code assigned to each ammunition item. The CC code categorizes the item as critical, major, or miNoR and is cited on each drawing, specification, or other relevant documents, as follows:

- a. Critical - C1 through C99.
- b. Major - M101 through M199.
- c. MiNoR - 201, 202, etc.

Supplementary symbols may be assigned which suffix the Classification Code to convey specific information (e.g., E - requires exceptional testing or inspection, L - potentially hazardous, etc.). CC codes assist in decision making by reducing judgment demands and providing visible indicators useful in determining the disposition of nonconforming material. The codes are a useful tool in the decision process for approving or disapproving contractor recommended waivers and deviations. MIL-STD-109, Quality Assurance Terms and Definitions, and MIL-STD-2101, Classification of Characteristics, are sources of information concerning their assignment and use in configuration management.

3.4.2.5 Lot Numbers. Navy designed ammunition items and components are generally identified by nomenclature followed by a Mark (MK) and Mod number, for example:

Flare Decoy MK 48 Mod 0
Flare Decoy MK 48 Mod 1

MK 48 Mod 0 is assigned to the first approved design with a unique set of physical and performance characteristics. Subsequent improvements or design changes not affecting performance characteristics will result in a modification which is identified as Mod 1. Army items are identified by a similar system of nomenclature and alphanumeric numbering. For example:

Charge Demolition M5A1

M5 is the first approved design in the demolition charge family with characteristics sufficiently different from the M4 design. The A1 is the first modification.

a. Lot Control. Ammunition items vary in complexity from a simple in-lb cast block of TNT in a card-

board/metal container with a well for a blasting cap to the Tomahawk cruise missile that has several explosive and electronic components that must function in consonance. Primary and secondary components are produced by a number of commercial manufacturers under diverse conditions and with various approved waivers and deviations. The assignment of lot numbers and control of component homogeneity during production is compartmentalized by manufacturer production line and production period for all components and the end item produced. Lot data records provide the identification of these compartments (lots, lot strata) for tracking and control of any given lot throughout its life cycle. Some ordnance items are mass-produced as low-cost/high-volume material because they contain a minimum of parts or components. For example, cartridge caliber .45 Ball, M1911, consists of a bullet, a cartridge case, a primer, and smokeless powder. These components and the assembled round are produced in large quantities by automatic equipment at a rapid rate under constant production conditions. The probability is that large quantities are homogeneous. New lot numbers need not be assigned except for a change in component supplier, contract termination, or completion of a month's production run. Lot sizes can run as high as six-digits. Lot limiting factors for a complex item with low-to-moderate rate of production, such as gun ammunition, would result in lot sizes that would seldom exceed 10,000 rounds. For ships' combat readiness risk mitigation, arbitrary maximum lot limits have been imposed regardless of homogeneity for certain gun ammunition items.

<u>TYPES</u>	<u>ROUNDS</u>
76mm Fixed Cartridges	5,000
5" Propelling Charge	5,000
5" Projectiles HE	1,000
76mm Illuminating Cartridges	500
5" Illuminating Projectiles	500
16"/50 Projectiles	500

3.4.2.6 Lot Numbering Systems. As the original military agencies for design, development, and production of ammunition, the Navy and Army developed lot numbering systems to accommodate their own procedures for control of the various ammunition commodities. In the interest of interservice support in ammunition supply and management, particularly in the exchange of reclassification actions because of malfunctions of common items, lot numbering was standardized in MIL-STD-1168.

a. Items with lot numbers dating back to 1944 are still in stock and acceptable for use after minor maintenance. Expenditures of ordnance from 1944 to date have

reduced many older lots to remnant quantities. By 1978 all naval activities engaged in ordnance procurement or production complied with MIL-STD-1168. Phaseout of the old style lot numbers by attrition and conversion during major maintenance is a long-term process. Management and control of ordnance will require backup data and an understanding of both systems.

b. U.S. Navy Old Style Lots.

(1) For gun ammunition, fixed rounds, separated rounds (projectiles and propelling charges), and separate loading rounds (projectiles, bag propellant sections, and primers) the lot structure is as follows:

BE-244-C-68

(a) Prefix. A two-letter prefix is used for new ammunition. In the example, the letters BE are permanently assigned to a caliber and type of gun ammunition item of issue, in this case a 5"/38 Projectile AAC with a mechanical time fuze (MTF) MK 50 or MK 349 installed. The use of a prefix as a part of gun ammunition lot numbers was considered necessary as a double check for nomenclature and DoDIC/NALC (as in a message garble) and because gun ammunition items of issue were not assigned complete round Mark and Mod designations prior to 1978. The prefix is expanded to three letters by the addition of an "R" to signify a renovated lot (e.g., BER-1-H-74).

(b) Lot Sequence Number. A number from 1 to 9999 assigned in sequence for each lot produced. The numbers begin with 1 for the first lot produced in the year production begins. Lots started on or after 1 January of the next year revert back to lot 1.

(c) Manufacturer's Identification. A one, two, or three letter identification of the activity manufacturing or renovating the item. In the example, "C" is Crane AAA.

(d) Calendar Year of Production/ Renovation. A two-digit number to identify the year in which production or renovation of the ammunition lot was started.

(2) Pyrotechnics, Demolition Items, and Fuzes. USN designed and produced pyrotechnics, demolition items, and gun ammunition fuzes generally are identified by a MK and MOD permitting the elimination of the prefix. These lot numbers are structured as follows:

206-CRA-69 or 206CRA-0769 or 206-CRA 07/69

(a) Lot Sequence Number. A number beginning with 1 when production starts. In some cases (in-

house production) the first lot started after the new year-reverts back to lot 1. In other cases (commercial manufacture), the sequence number continues for the length of the contract and add-on procurements. Numbering continued, provided there was no break in production.

(b) Manufacturer's Identification. The same as for gun ammunition.

(c) Calendar Year of Production. A two-digit number identifying year of production or a four-digit number, with or without a slash, identifying the month and year of production.

c. U.S. Army Old Style Lots.

(1) The Navy uses a number of common items designed and procured by the Army. These are small arms ammunition items up to and including .50 caliber cartridges, grenades, antitank rockets, rockets, pyrotechnics, and demolition and mortar ammunition items. Army management of ammunition initially required only the control of the manufacturer's identification and sequential numbering of lots produced. Relative age as identified in Navy lots was maintained on master records in headquarters and available on ammunition data cards in the field. These early old style lots were structured containing these two elements, for example:

WCC-1 0950

(2) As production quantities increased with multiple production lines and follow-on reorders, an interfix number was added to ammunition lot numbers to group a series of lots into homogeneous lot strata. Interfix and sequence numbers are separated by a dash as follows:

COP-4-65

(3) The combination of two or more lots of complete rounds to form one lot, such as in linking complete rounds of .50 caliber cartridges, was handled by inserting a "-L" after the manufacturer's identification as follows:

RA-L-30-57 or LC-L-1-47

d. General Policies and Procedures for Navy and Army Old Style Lot Numbering Systems.

(1) Manufacturer's (including in-house production and renovation activities) identification symbols as listed in MIL-STD-1461 were used.

(2) The Navy and Army used a system of suffixing lot numbers. One or two letters were added after the last digit in the lot.

(a) U.S. Army - The suffix indicated that a major or minor maintenance action had been performed on the parent lot. When the assignment of the suffix "D" is directed by higher authority, for example, the maintenance activity must ensure that previous maintenance actions required by suffixes A, B, and C have been performed as well.

(b) U.S. Navy - A single letter suffix indicated that a major or minor maintenance action, not involving a primary component replacement, had taken place. The significance of the ABC sequence is the same as the Army system except, that a suffix "X" for X-ray examination is added to any other letter resulting in a two-letter suffix.

(c) U.S. Navy - For major maintenance involving ammunition breakdown and replacement of a component, the item was recertified at the same time. Because of the recertification, a letter "R" was added to the caliber and type two-letter prefix resulting in an entirely new lot number.

(d) Navy and Army - The use of dashes for spacing between lot number elements was required.

(e) Navy and Army - When maintenance had been performed as directed resulting in the application of a suffix, a new data card was prepared for each round processed (or the old data card is changed) by adding the suffix and a notation that the required maintenance had been performed. For example, the notation for the suffix "D" would be the fourth notation, following the notations covering maintenance actions pertaining to suffixes "A," "B," and "C."

e. New Style Lot Numbering System (MIL-STD-1168A). The standardization of ordnance lot numbering was based on the common requirements of the various lotting systems of manufacturer identification and sequential numbering of quantities of identical items. Essential service requirements of homogeneity grouping and age identification were added resulting in a 13-character basic lot number. Provisions were then added to annotate lots by letters to indicate a nonstandard lot number or a reworked basic lot. Standard lot numbers are constructed as follows:

CRA78K001-415A

(1) Characters 1-3. Manufacturer's identification as listed in MIL-STD-1461. Manufacturers with one-

or two-character codes will have remaining positions filled with dashes (e.g., P-- or PA-).

(2) Characters 4 & 5. A two-digit numeric code identifying the year of production (e.g., item produced in 1978 is coded 78).

(3) Character 6. A single alpha code signifying month of production (e.g., A-January, B-February, etc.).

(4) Characters 7-9. Lot interfix number, sequentially from 001 thru 999.

(5) Character 10. Hyphen required for all standard lots. For nonstandard lots or lots requiring special codes the hyphen is replaced by an alpha (such as H-Hybrid Lot, M-Modified Lot, V-Overhauled Lot, see MIL-STD-1168A para 5.1 for a complete list of codes).

(6) Characters 11-13. Lot sequence number from 001 thru 999. (The next lot produced after lot 999 requires an interfix number change and reverts to 001).

(7) Character 14. A single alpha character suffix is added after the final position to signify the basic lot has been reworked. For lots reworked more than once, sequential alphas are assigned. The alphas E, I, O, or X shall not be used.

3.4.2.7 Ammunition Data Cards.

a. Ammunition data cards, prepared in accordance with MIL-STD-1167, are used to identify the composition of an ammunition lot when it is initially produced, or when it is modified, reworked, or regrouped. The ammunition data card is a record of the basic configuration of the ammunition lot, with reference to documents containing the configuration details. In addition to item nomenclature, NSN/DoDIC, drawing and specification numbers, lot number, manufacturer/loading activity, and quantity and date of production, data cards identify all primary components by manufacturer, lot number, and quantity. It becomes an historical record when the ammunition lot is reworked by replacement of components, indicating dates of renovations, new components, and original lot number for complete traceability.

b. Data cards contain the complete detailed lot identification of the ammunition item and its lot history. They are kept up to date at a central repository at the IOC for all SMCA-assigned ammunition items. In some cases a copy of the data card is found in the waterproof protective cap of each projectile, in cartridge and propelling charge tanks, and in packing containers of multipack

items. There is, however, no longer a Navy requirement for a data card to accompany each ammunition item.

c. Ammunition Data Card, DD 1650 shall be used. Ammunition data cards are printed on 5x8 inch commercial manila tag board or equivalent. The central repository of ammunition data cards located at the IOC has the information loaded in a computer database.

3.4.3 Configuration Control. Configuration control is the systematic proposal, justification, evaluation, coordination, and approval or disapproval of proposed changes. It also covers the implementation of all approved changes in the configuration of a CI after establishment of the configuration baseline. Configuration control continues throughout the life cycle of the CI.

3.4.3.1 Waivers and Deviations. MIL-STD-973 prescribes the procedures for processing requests for waivers and deviations. MIL-STD-109 standardizes the definition of the two terms.

a. Waiver. A written authorization to accept an item, which during manufacture, or after having been submitted for Government inspection or acceptance, is found to depart from specified requirements, but nevertheless is considered suitable for use "as is" or after repair by an approved method.

b. Deviation. A specific written authorization, granted prior to the manufacture of an item, to depart from a particular requirement(s) of an item's current approved configuration documentation for a specific number of units or a specific period of time. (A deviation differs from an engineering change in that an approved engineering change requires corresponding revision of the item's current approved configuration documentation, whereas a deviation does not).

Waivers and deviations represent temporary or limited departures from baseline requirements or characteristics in the documentation; waivers, during production, and deviations before production. Based on its assigned CC, a waiver or deviation request for an item is classified as critical, major, or minor and must be proven as justified and necessary by the contractor before being granted. No waiver or deviation having an adverse effect on safety is approved. If a proposed waiver or deviation is recurrent (i.e., a repetition or extension of a previously authorized departure from a requirement), it is generally viewed as evidence that there is either a deficiency in the design documentation or in the practices of the manufacturer. If so, review is made by the AEA to determine the disposition of the contractor's request for waiver or deviation. If ap-

appropriate, the AEA may recommend that corrective measures be taken (e.g., that an ECP be prepared).

3.4.3.2 Request Processing.

a. As prescribed in MIL-STD-973, the contractor may use one of the following for requesting waivers and deviations:

- (1) Form DD 1694, Request for Deviation/Waiver.
- (2) The contractor designed form.
- (3) A letter.

b. Each request for a waiver or deviation must indicate the CC code of the item and contain all pertinent information listed on DD 1694.

c. The contractor submits all critical, major, and minor waiver and deviation requests to the procuring activity (IOC or NAVAMMOLOGCEN via the CAO, who may add comments and recommendations. Copies are forwarded concurrently to the PM, the cognizant DA, the AEA, and NVLNO.

d. Each request for a waiver or deviation is reviewed by the COMNAVSEASYSCOM engineering agents designated in NAVSEA publication T-9409-AE-DX-10. The AEA is the action officer for contractor submitted waivers and deviations relating to in-production ammunition items. The cognizant DA reviews the contractor's request for impact on design, performance, safety, producibility, and interfaces, and submits relevant comments and recommendations to the AEA. After additional review, that includes consideration of factors such as maintainability and life cycle costs, the AEA may approve or reject minor waivers and deviations. Those that are classified major or critical are forwarded for final approval or rejection by the PM.

e. Waivers and deviations for items used by the Navy, but developed by another Service, will be coordinated with the Navy by the IOC. In such cases, the IOC retains approval authority; however, the Navy can refuse to accept material covered by an IOC approved waiver or deviation with which they do not concur (would adversely affect Navy safety/performance).

f. A complete record of all waiver and deviation requests and actions is maintained in ACMDS. It is cross referenced to permit identification by contract, part num-

ber, and type of item. This file is used to facilitate the review of incoming requests and to audit corrective actions.

3.4.3.3 Engineering Change Proposals.

a. An essential feature of configuration management is change approval, which complements the inherent change potential of complex items with the necessary responsiveness in correcting deficiencies or instituting enhancements. The events in the change approval process must operate as coherent elements within the centralized configuration management system (i.e., ACMDS). Engineering and functional requirements of an ammunition item are strictly defined by a technically qualified team prior to its procurement. Therefore, an in-depth technical review is necessary for those changes made during production. The evaluation of each proposed change must consider all the factors of that change, such as design performance, costs, impact on delivery schedules, operational effectiveness, maintainability, logistics, and training. The evaluation of proposed changes also includes the consideration of the cost benefits of retrofitting in-stock and in-production assets versus operating and maintaining multi-configurations of the item.

b. DoD 5160.65-M emphasizes that the Navy retains responsibility for the overall configuration management and control of SMCA-assigned ammunition items developed by COMNAVSEASYSCOM. This gives the PM the final authority over changes to items developed by COMNAVSEASYSCOM. The IOC has the responsibility to provide comments to the AEA concerning the potential impact of the Navy's approval or disapproval of contractor-initiated ECPs. Information and recommendations by the IOC relate to the impact of proposed changes with respect to costs and scheduled deliveries, or to future maintenance within the wholesale inventory. On Joint Service usage items, all requiring Services are provided the opportunity to accept or reject change proposals for specified applications. Technical exceptions and unique Service requirements are reconciled among the Services. During production, the IOC participates in the configuration control responsibility by interfacing with the Services in evaluating:

(1) Class I actions, which include urgent ECPs, emergency ECPs, and routine ECPs during current SMCA procurement contracts,

(2) Class II actions, and

(3) Configuration Management of jointly used ammunition items regardless of procurement activity. Where wholesale ammunition inventories are affected by a

proposed change, the IOC is provided sufficient visibility and data to ascertain impact if the proposed changes are incorporated.

c. Engineering changes are categorized in MIL-STD-973 as a Class I engineering change when one or more of the factors listed below is affected.

(1) The Functional or Allocated Configuration Documentation (FCD or ACD), once established, is affected to the extent that any of the following requirements would be outside specified limits or specified tolerances.

- (a) Performance.
- (b) Reliability, maintainability or survivability.
- (c) Weight, balance, or moment of inertia.
- (d) Interface characteristics.
- (e) Electromagnetic characteristics.
- (f) Other technical requirements in the specifications.

NOTE: minor clarifications and corrections to FCD or ACD shall be made only as an incidental part of the next Class I ECP and accompanying Specification Change Notice (SCN) or Notice of Revision (NoR), unless otherwise directed by the AEA.

(2) A change to the TDP, once established, will affect the FCD or ACD or will impact one or more of the following:

- (a) Government Furnished Equipment (GFE).
- (b) Safety.
- (c) Compatibility or specified interoperability with interfacing CIs, support equipment or support software, spares, trainers or training devices/ equipment/ software.
- (d) Configuration to the extent that retrofit action is required.
- (e) Delivered operation and maintenance manuals for which adequate change/revision funding is not provided in existing contracts.

(f) Preset adjustments or schedules affecting operating limits or performance to such extent assignment of a new identification number is required.

(g) Interchangeability, substitutability, or replaceability as applied to CIs, and to all subassemblies and parts except the pieces and parts of non-repairable subassemblies.

(h) Sources of CIs or repairable items at any level defined by source-control drawings.

(i) Skills, manning, training, biomedical factors, or human-engineering design.

(3) Any of the following contractual factors.

- (a) Cost to the Government including incentives and fees.
- (b) Contract guarantees or warranties.
- (c) Contractual deliveries.
- (d) Scheduled contract milestones.

d. Engineering changes are categorized in MIL-STD-973 as a Class II when it does not fall within the above definition of a Class I engineering change. Examples of Class II engineering changes are:

- (1) Changes in documentation only (e.g., correction of errors, addition of clarifying notes or views).
- (2) minor changes in hardware (e.g., substitution of an alternate item) which do not affect form, fit, or function.

e. All ammunition ECPs are reviewed by an inservice CCB chaired by the ISEA. (Most ammunition changes are processed by the CCB without the necessity of formally convening the board.) The ISEA coordinates the following review actions.

- (1) All ECPs are reviewed by the cognizant DA and the AEA.
- (2) Class I ECPs are forwarded for additional review and approval by the PM.
- (3) ECPs affecting interface with external systems are reviewed by the cognizant systems manager.

f. Original ECPs with rationale and supporting data are submitted directly to the cognizant DA with infor-

mation copies to the PM, AEA, and to the cognizant complete round DA. The DA's responsibility is to review the ECPs based on performance, design characteristics, safety considerations, and logistics support implications. This review is performed with benefit of the recommendations and data provided by the complete round DA.

g. The cognizant DA has the authority to originate ECPs and to approve or disapprove those originated elsewhere. The ECPs are then submitted to the AEA with supporting engineering data and rationale. Since ECPs can result in a change to technical documents, drawings, and the ADL, etc., the cognizant DA may prepare a Notice of Revision (NoR) for submission to the AEA with approved ECPs. The NoR is a form for proposing revisions to a drawing, parts lists, and other technical and engineering documents.

h. Upon receipt of an approved ECP from the DA or PM requiring a revision to procurement documentation, the AEA evaluates the relevance of the engineering changes to current and planned procurements and approves or disapproves the NoR prepared by the DA. An approved NoR is promulgated to notify users that the documentation has been revised.

i. The activity having custody of the master technical documents pertaining to the approved NoR, revises the documents and forwards the applicable aperture cards to the AEA for inclusion in their master documentation files.

j. The AEA establishes a record of all relevant ECP and NoR data in the ACMDS.

k. The AEA ensures that the SMCA is forwarded updated or modified PDPs prior to finalizing ECP and NoR actions.

3.4.4 Configuration Status Accounting (CSA). The purpose of CSA is to ensure accurate identification of each CI and delivered unit so that the necessary logistics support elements can be correctly programmed and made available in time to support the CI. An adequate and accurate CSA will enhance the program and functional managers' capabilities to identify, produce, inspect, deliver, operate, maintain, repair, and refurbish, etc., CIs in a timely, efficient, and economical manner in satisfying their assigned responsibilities. For surface ammunition, ACMDS fulfills this function.

3.4.4.1 MIL-STD-973 Requirements.

a. Identify the current approved configuration documentation and identification number associated with each CI.

b. Record and report the status of proposed engineering changes from initiation to final approval/contractual implementation.

c. Record and report the results of configuration audits to include the status and final disposition of identified discrepancies.

d. Record and report the status of all critical and major requests for deviations and waivers which affect the configuration of a CI.

e. Record and report implementation status of authorized changes.

f. Provide the traceability of all changes from the original baseline configuration documentation of each CI.

g. Report the effectivity and installation status of configuration changes to all CIs at all locations.

3.4.4.2 Configuration Management Documents. ACMDS will manage the following documents.

a. Automated Data Lists.

b. Automated Data Lists - Change Notices.

c. Automated Data Lists - Notice of Revisions.

d. Engineering Change Proposals.

e. Notice of Revisions.

f. Waivers.

g. Deviations.

h. Ammunition Data Cards.

i. Depot Maintenance Work Requirements.

j. Contracts.

k. MIPRs/Purchase Orders/Work Requests.

l. Drawings.

m. Specifications/Standards.

3.4.4.3 ACMDS Computer and Connectivity. The ACMDS can be accessed from within NSWCDIV Crane

via the local Novell Network. ACMDS can be accessed from outside NSWC DIV Crane via a modem connected to one of two dedicated computers used for outside access to the AEA/ISEA FoxPro systems. In the future, some components of the ACMDS will be accessible from the World Wide Web and the Internet. The ACMDS utilizes the Microsoft Visual FoxPro Relational Database Management System, which enables the surface ammunition AEA/ISEA to communicate with the following systems containing configuration data.

- a. Lot Data Card System. Complete IOC lot data card system.
- b. FileNet Imaging, Storage, and Retrieval System. Document storage system.
- c. Procurement Status System. Holds data on all surface ammunition procurements.
- d. Raster Image, Storage, Conversion, and Retrieval System (RISCRS). Drawing management system.

Communications with these systems enable those involved in configuration management to do the following.

- e. View ammunition lot data cards that are linked to ADLs in ACMDS.
- f. Call up any scanned document that is in ACMDS, such as Contracts, ECPs, Waivers, Deviations, ADLs, NoRs, MIPRs, etc.
- g. View funding information on a specific MIPR in ACMDS from the Procurement Status System.
- h. View drawings that are managed in ACMDS from the RISCRS system.

3.4.4.4 ACMDS Reports. ACMDS will provide a variety of canned and ad-hoc reports to all ACMDS query users.

- a. ADL Listings.
- b. Items Used on ADL Listings.
- c. Contract Listings.
- d. ECP/Waiver/Deviation Listings.
- e. NoR Listings.
- f. MIPR Listings.

- g. Specification/Standards Listings.
- h. Drawing Listings.
- i. Items Referenced on Drawing Listings.
- j. Depot Maintenance Work Requirements (DMWR) Listings.

The above reports make up the majority of the ACMDS reports, but are not the only reports that ACMDS can provide. ACMDS has the capability to allow the user to create reports tailored to whatever parameters are required at the time.

3.4.5 Configuration Audits. As defined in MIL-STD-973, configuration audits are normally performed before establishing a Product Base Line (PBL) for the item. Configuration audits consist of the Functional Configuration Audit (FCA) and the Physical Configuration Audit (PCA).

3.4.5.1 Functional Configuration Audit. An FCA shall be conducted for each configuration item for which a separate development or requirements specification has been baselined, except as otherwise required by the contracts, and for the overall system, if required by the contract. The objective of the FCA will be to verify the CI's and system's performance against its approved configuration documentation. Test data for the FCA shall be that collected from the test of the configuration of the item that is to be formally accepted or released for production (prototype or preproduction article). If a prototype or preproduction article is not produced, the test data shall be collected from the test of the first production article. Subject to prior Government approval, the FCA for complex items may be conducted in increments. In such cases, a final FCA may be conducted to ensure that all requirements of the FCA have been satisfied. In cases where item verification can be completely determined only after system integration and testing, the final FCA shall be conducted using the results of these tests.

3.4.5.2 Physical Configuration Audit. The PCA shall be the formal examination of the as-built configuration of a CI against its design documentation. The PCA for a CI shall not be started unless the FCA for the CI has already been accomplished or is being accomplished concurrent with the PCA. After successful completion of the audit and the establishment of a PBL, all subsequent changes are processed by formal engineering change actions. The PCA also determines that the acceptance testing requirements prescribed by the documentation are adequate for acceptance of production units of a CI by quality assurance activities. The PCA includes a detailed audit of engineering drawings, specifications, technical data, and tests utilized in production of CIs. The PCA shall include an audit of the

released engineering documentation and quality control records to make sure the as-built or as-coded configuration is reflected by this documentation.

3.4.5.3 Quality Deficiencies. Full-scale production begins after the approval of the PBL for an ammunition item, the award of the production contract, and the completion of the post-award survey. If quality deficiencies emerge during production, and delivery lots are rejected, the Navy may request the IOC to authorize an on-site configuration audit. The on-site audit is scheduled and coordinated by the AEA. The DA, CAO, and other activities participate as required.

3.4.5.4 Additional Configuration Audits. Additional audits may be performed during production for selected changes to the item's configuration documentation or when contractors are changed. Broad policies governing configuration audits for SMCA procured items are set forth in DoD 5160.65-M. This document provides that a PCA may be conducted at the contractor's facilities when requested by the developing Service. (The audit may be

performed in coordination with the requiring Service when the requiring Service is other than the developing Service.) Also, an FCA may be conducted by witnessing functional tests and reviewing test data at the contractor's facilities. The CAO must respond to such requests for audit and provide access to the contractor's software (production procedures, quality assurance procedures, process control data, etc.) and hardware employed in connection with the item being audited.

3.4.5.5 Audit Report and Deficiency Correction. Upon the completion of each audit, a report of findings is submitted to the IOC by the AEA. Deficiencies identified during PCAs and FCAs require corrective action within 30 days. If these timeframes cannot be met, the IOC will advise the AEA accordingly, citing the reasons for delay. Problems are resolved between the AEA and the IOC.

3.4.5.6 Audit Recording. In all matters pertaining to configuration control and management, the results of the contractor audit and the corrective action taken are recorded in ACMDS.

CHAPTER 3.5

Product Improvement Program

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CHAPTER 3.5

Product Improvement Program (PIP)

3.5.1 Product Improvement Program

3.5.1.1 General. Product Improvement Programs (PIPs) for ammunition in the present inventory are initiated by DAs as the result of identified design deficiencies in ammunition, or new technologies which would reduce life cycle costs. PIPs, which are funded with PAN-MC or WPN funds, are only authorized if the targeted ammunition item or component is contained in the PM's approved procurement plan. A PIP is initiated by the DA submitting a PIP Abstract.

3.5.2 PIP Abstract. PIP abstracts for proposed PIPs are forwarded to the PM by 1 April each year as part of the annual update of the Three Year Plan for Engineering Support. The format of the abstract is directed by the PM. On-going PIPs should also be addressed in the Three Year Plan, but only for providing an update of the current schedule/cost per FY and reasons for changes. The PM will review the submitted PIP abstracts, select those that should be developed into a formal plan, and assign a PIP number by 1 May.

3.5.3 PIP Plan.

3.5.3.1 Plan Contents. A PIP Plan is developed for each of the selected PIPs by the DA, as assigned by the PM. Each PIP Plan must address the following as directed by the PM:

- a. PIP Objective.
- b. Technical Approach.
- c. Breadth of Application (relevant calibers/components).

- d. Plan of Action and Milestones (POA&M).
- e. Funding Requirements.
- f. Test Plan.
- g. Ammunition Expenditure Requirements.

3.5.3.2 PIP Planning Meeting. Each June the PM will host a PIP Planning Meeting to allow each DA to present their PIP(s). All elements of the plan will be presented and discussed during the meeting. The PM will negotiate with the DAs on the fine details of the selected PIPs in July.

3.5.3.3 Finalized PIP Plans. The DAs will submit finalized PIP Plans for PM approval by 20 August. The PM will identify funded PIPs each September in the appropriate DA funding letter.

3.5.4 Reports and Reviews.

3.5.4.1 Quarterly Reports. Quarterly reports will be submitted on all PIPs to coincide with production engineering and financial status reports. The report should include an updated POA&M, financial status at the summary task level, changes from the baseline proposal, and a narrative summarizing technical accomplishments and significant events.

3.5.4.2 Program Reviews. Program reviews will be conducted by the PM as required.

3.5.5 Closure. Each PIP will be officially closed upon completion or cancellation by a letter from the DA PIP manager to the PM.

SECTION 4

In-Service Management

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CHAPTER 4.1

In-Service Engineering

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CHAPTER 4.1

In-Service Engineering

4.1.1 In-Service Engineering

4.1.1.1 General. Engineering Activities. In-Service Engineering normally involves the same engineering activities within the NAVSEA Warfare Center Divisions that provided the acquisition engineering support.

a. Design Agent. The DA continues with previously assigned responsibilities, along with additional responsibilities.

b. In-Service Engineering Agent. Normally, the ISEA is the same engineering activity assigned as the AEA during the acquisition phase, with a name change and some additional responsibilities.

c. Systems Integration Agent. The SIA continues previously assigned responsibilities.

d. Surveillance Coordinator (SC). The SC is a new engineering activity joining the team to provide an overview of the general readiness of assigned ammunition.

4.1.1.2 Perspective. The primary focus of in-service engineering management is to build, defend, and execute a balanced program of proactive and reactive measures to best achieve/maintain the Ready For Issue Objective (RFIO) for each ammunition item, within the fiscal constraints applied by the Navy budget.

4.1.1.3 Organizational Relationships. Figure 4-1-1 identifies the organizations involved in the in-service management processes and their relationship to each other.

4.1.2 Engineering Responsibilities. Annually, the PM assigns engineering responsibilities for specific ammunition items to specific commands in a Tasking Statement. This Tasking Statement identifies the engineering task responsibilities, the ordnance items to which the tasks apply, and any special reporting requirements. This Tasking Statement accompanies the annual funding document to specify the authorized use(s) of the funds being provided. Recurring engineering responsibilities are listed under the appropriate title.

4.1.2.1 Design Agent. DA engineering support responsibilities, identified in subparagraph 3-2.2.1. continue throughout the life cycle of the assigned ammunition item.

a. Specific In-Service Engineering Responsibilities.

(1) Conduct malfunction investigations, when assigned by the PM, or provide engineering and test support for investigations assigned to other DAs, ISEAs, or the SC as requested.

(2) Determine corrective design changes for future production and configuration changes to correct existing stocks, when malfunctions are attributed to the basic design.

(3) Review and provide engineering comments, recommendations and justification for waivers and deviations affecting safety or design configuration.

(4) Initiate product improvement studies for ammunition in full-scale production.

(5) Participate, as necessary, in first article testing and acceptance testing of new production.

(6) Provide engineering support for Navy procurements of common-service items whose design and configuration management responsibilities belong to another Service (e.g. Army designed small arms ammunition).

b. DAs providing in-service engineering support are funded as follows:

(1) Production Engineering and Product Improvement Support. Funded with PAN-MC/WPN funds programmed annually for production engineering under the budget line entitled Ammunition Procurement or Weapons Procurement, as appropriate for each type subhead scheduled for procurement. Product improvement funds are included only for specific items as appropriate (e.g. 5"/54 Hifrag Projectile). Upon Congressional approval, funds are allocated by the PM to each DA on work request documents.

(2) Malfunction Investigations and Associated Testing. Funded with O&MN funds programmed annually

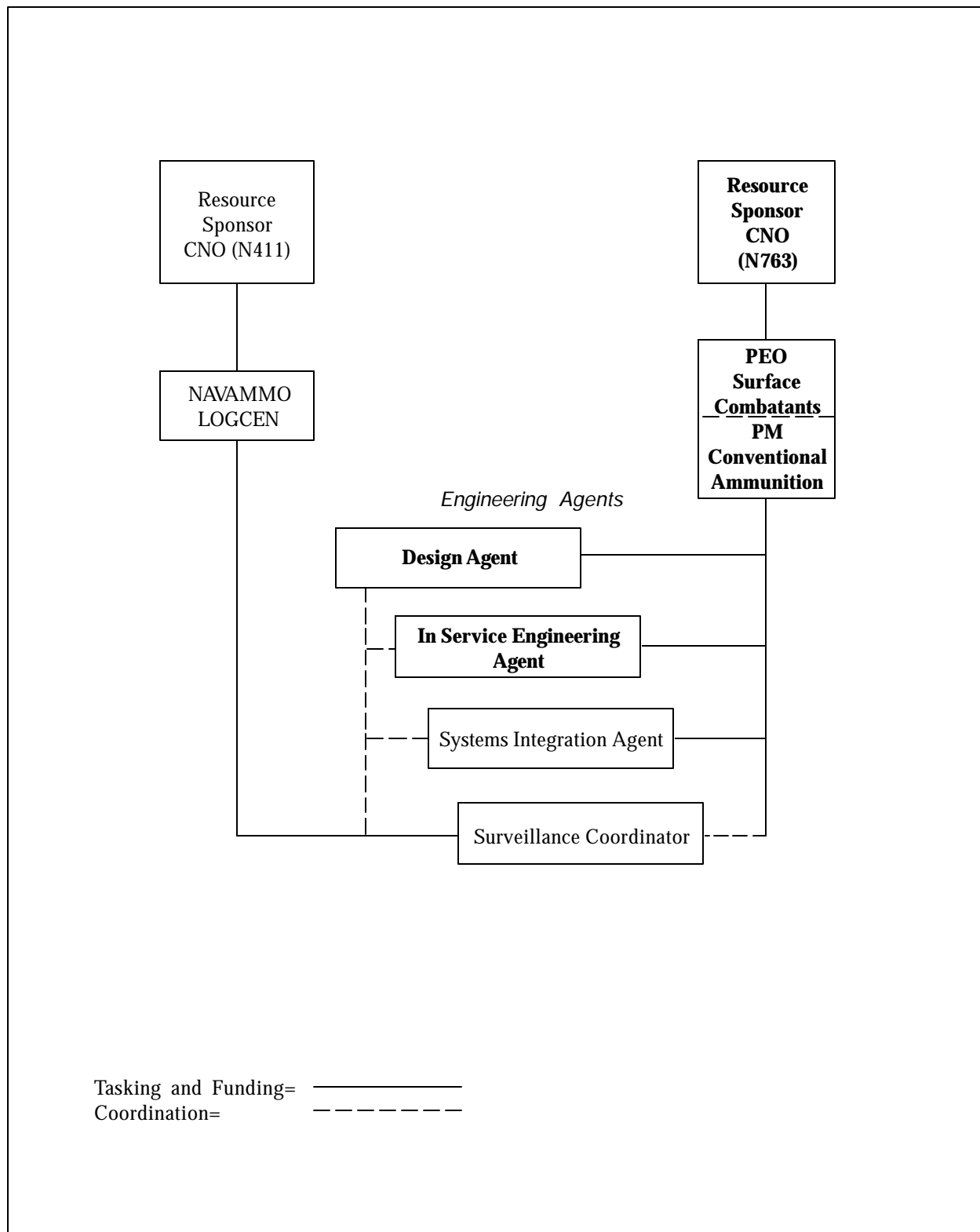


Figure 4-1-1. In-Service Engineering Organizational Relationships.

based on projected requirements. Upon Congressional approval, funds are allocated by the PM to each DA on work request documents.

(3) Engineering Support as Required for Special Determinations on Safe and Environmentally Acceptable Ordnance Disposal Operations. Funded with O&MN funds programmed annually by the Disposal Program Office, based on projected requirements. Upon Congressional approval, funds are allocated by the Disposal PM to each DA, as required, on work request documents.

4.1.2.2 In-Service Engineering Agent. After entry of the ammunition item into the active inventory, the AEA normally becomes the ISEA, continuing the AEA responsibilities identified in subparagraph 3-2.2.2. for any further procurements.

a. The ISEA takes on the following responsibilities for the assets in inventory.

(1) Prepares DMWRs.

(2) Provides engineering and technical support to activities engaged in maintenance of assigned ammunition items.

(3) Determines asset readiness postures and provides maintenance priorities for maintenance processing of assigned ammunition items.

(4) Coordinates and participates in analyses and investigations of major and minor malfunctions as assigned by the PM and recommends corrective actions.

b. ISEAs providing engineering support for in-service items are funded as follows:

(1) Production Engineering and Product Improvement Support. Funded with PAN-MC/WPN funds programmed annually for production engineering under the budget line entitled Weapons Procurement or Ammunition Procurement as appropriate for each type subhead scheduled for procurement. Product improvement funds are included only for specific items as appropriate (e.g. 76 mm ammunition). Upon Congressional approval, funds are allocated by the PM to each ISEA on work request documents.

(2) Malfunction Investigations and Associated Testing. Funded with O&MN funds programmed annually based on projected requirements. Upon Congressional ap-

proval, funds are allocated by the PM to each ISEA on work request documents.

(3) Engineering Support as Required for Special Determinations on Safe and Environmentally Acceptable Ordnance Disposal Operations. Funded with O&MN funds programmed by the Disposal Program Office annually based on projected requirements. Upon Congressional approval, funds are allocated by the Disposal PM to each ISEA on work request documents.

4.1.2.3 Systems Integration Agent. The SIA continues the responsibilities identified in subparagraph 3-2.2.3.

4.1.2.4 Surveillance Coordinator. The SC supports NAVAMMOLOGCEN (the Quality Evaluation (QE) and Surveillance PM). The SC acts as the Quality Evaluation Agent (QEA)/SC for the ordnance items assigned by NAVAMMOLOGCEN.

a. Specific SC Engineering Responsibilities.

(1) Maintain a complete data bank of quality evaluation test results and Fleet performance results by individual lot/item for assigned ammunition.

(2) Participate in investigations of major and minor malfunctions as assigned by the PM.

(3) Maintain a capability for the complete breakdown of assigned ammunition into their separate parts and perform a complete visual, electronic, sonic, or other examination.

(4) Establish a surveillance testing master plan of assigned ammunition.

(5) Implement the periodic testing of ammunition items in accordance with the master plan.

(6) Provide recommendations to the Surveillance PM, and the appropriate Acquisition and Maintenance PMs, for priority of issue codes or reclassification to unserviceable, based on test results.

b. SCs providing engineering support are funded for surveillance, testing, and malfunction investigations with O&MN funds programmed annually based on projected requirements. Upon Congressional approval, funds are allocated by the Surveillance PM (NAVAMMOLOGCEN) to each SC on work request documents.

CHAPTER 4.2

Quality Evaluation/Surveillance Programs

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SECTION 4-2

Quality Evaluation/Surveillance Programs

4.2.1 Quality Evaluation/Surveillance Programs

4.2.1.1 General. The Quality Evaluation and Surveillance programs provide the major focus on the health of the in-service ordnance stockpile. The quality, safety, and reliability information derived from these programs assists the ordnance inventory and technical managers in maintaining safe and high quality stocks for use by the Fleet.

4.2.2 Quality Evaluation (QE) Program. The QE program applies to all in-service nuclear and non-nuclear ordnance under COMNAVSEASYS COM and CMC cognizance. This includes those ordnance items procured with a warranty contract.

4.2.2.1 Background. Ordnance typically degrades in safety, quality, reliability, and performance characteristics overtime. The degradation is generally caused by changes in chemical and physical properties, brought on by logistic and maintenance actions and from the effects of storage and deployment. The primary goal of the program is to assure user safety and satisfaction with the ordnance provided to the Fleet. To do this, the QE program periodically evaluates the in-service characteristics to determine if any degradation has occurred. Further, the program projects service life for those ordnance items and components which degrade. The QE program reports serve as a basis for the inventory and technical managers to take actions to ensure both ordnance safety and user satisfaction.

4.2.2.2 Purpose.

a. Determine current condition of the ordnance stockpile by assessing safety, quality, reliability, maintainability, and performance.

b. Identify and evaluate factors (including interfaces with combat systems) affecting the current condition of the stockpile or the stockpile-to-target sequence, including factors originating from design, assembly, maintenance, handling, storage, and deployment.

c. Identify trends affecting the stockpile to predict the future condition of the ordnance stockpile and to predict service life.

d. Monitor preventive or corrective actions and policies to determine the effect on safety, reliability, maintainability, and performance.

e. Provide technically and statistically-based recommendations for stockpile retention, improvement, or disposal.

f. Provide quality information to Navy activities responsible for developing, procuring, and maintaining ordnance so that they can use this experience gained to enhance product assurance.

4.2.2.3 NAVAMMOLOGCEN Responsibilities.

a. Serve as the PM for the COMNAVSEASYS COM ordnance QE Program.

b. Provide QE data and annual sampling requirements to Acquisition and Maintenance Managers for inclusion in their planning and budgeting.

c. Make QEA assignments for each ordnance type.

d. Revise and approve, in coordination with the Acquisition and Maintenance Managers, service life expiration dates using results from QE program findings.

e. Initiate and coordinate QE program test and evaluation criteria and performance assessment criteria with the Acquisition and Maintenance Managers.

f. Conduct periodic QE program progress reviews with QEAs, and Acquisition and Maintenance Managers, including the status of QE Program recommendations.

4.2.2.4 Ordnance Acquisition/Maintenance Manager Responsibilities.

a. Include test sample provisioning in acquisition and logistic support planning and budgeting to ensure quality evaluation sample requirements are met per the applicable Quality Evaluation Plan (QEP).

b. Approve and provide annual quality evaluation test samples, including logistic support for return of unexpended samples to inventory.

c. Advise NAVAMMOLOGCEN of actions taken on the results and recommendations reported by the QE program.

d. Approve, in coordination with NAVAMMOLOGCEN, QE program test and evaluation criteria and performance assessment criteria.

e. Determine initial estimated service life for ordnance and ordnance components which degrade.

f. Publish initial and revised ordnance service life expiration dates.

g. Provide first article, acceptance, periodic production, Depot and Intermediate Level maintenance and failure analysis data to the responsible Quality Evaluation Agent (QEA).

h. Allow the QEAs access to ordnance databases (Depot Level maintenance, configuration management, etc.).

i. Review and approve Quality Evaluation Programs (QEPs) prior to implementation.

j. Participate in QE program progress reviews conducted by NAVAMMOLOGCEN.

4.2.2.5 Quality Evaluation Agent (QEA) Responsibilities.

a. Support NAVAMMOLOGCEN on technical aspects of the NAVSEA QE program for assigned ordnance.

b. Prepare and maintain a step-by-step description of test processes.

c. Coordinate the test and evaluation efforts with participating activities.

d. Establish and maintain quality evaluation databases for assigned ordnance. Each QE database will include performance, surveillance testing and production acceptance data; and as required, FAT and Intermediate and Depot Level maintenance data.

e. Prepare QEPs for each assigned ordnance item or groups of related ordnance. QEPs are management type documents which describe what is being done, why it is being done, and identifies participants.

f. Provide NAVAMMOLOGCEN annual sample requirements for assigned ordnance.

4.2.2.6 Participating Activity Responsibilities.

a. Provide test and evaluation services to the QE program.

b. Submit test plans for assigned ordnance to the QEA.

c. Submit reports of test and evaluation results to the QEA.

4.2.3 Ammunition Stock Surveillance Program. The Surveillance Program, applies to the worldwide stockpile of all 2T Cog and OT Cog ammunition items listed in TW010-AA-ORD-010. The Ammunition Stock Surveillance Program is a more narrowly focused version of the QE program and described above, and not a separately functioning parallel program.

4.2.3.1 Fiscal Year Surveillance Plan. Coordinating centers (QEAs) will prepare and submit fiscal year surveillance Plans to NAVAMMOLOGCEN by 1 March of the fiscal year preceding the program execution/budget year. Component coordinating centers will prepare and submit FY plans (component level) to the complete round coordinating center by 1 February for inclusion in the complete round FY plan. NAVAMMOLOGCEN will be provided a copy of component coordinating center FY plans. All FY plans will provide a three year projection (budget FY plus two outyears).

All items selected for evaluation can be identified within two basic evaluation categories, each with their own specified sampling technique:

a. Items requiring certification evaluation.

b. Items which are of suspect safety and/or reliability.

The annual Fiscal Year Ammunition Stock Surveillance Plan will be used as the basis for obtaining surveillance funding from CNO. NAVAMMOLOGCEN will provide appropriate funding to the coordinating and participating centers based on the plan.

4.2.4 Surveillance, Lot Acceptance, & Mobile Ammunition Evaluation and Reconditioning Unit (MAERU) (Test Database) System (SLAMS). SLAMS is an automated database specifically designed for maintaining QE data on surface ammunition.

4.2.4.1 Purpose.

- a. Storage of key parameter data.
- b. Surveillance and test management and planning.
- c. Analysis by the engineering and quality evaluation communities.
- d. Predicting degradation trends to enhance a just-in-time component procurement program.

4.2.4.2 System Functional Areas.

a. Data Entry. Provides entry of data from hardcopy data sheets from Lot Acceptance Test (LAT), Mobile Ammunition Evaluation and Reconditioning Unit (MAERU), and surveillance actions. Data entry can be accomplished on any computer and the system incorporates checks and validations to ensure accurate data entry.

b. Data Query. Provides query capability for all users by type, strata, subcomponent, or test parameter.

c. SLAMS Program Database Management System. Manages the internal databases required by SLAMS.

(1) Strata.

(2) Test Parameter.

(3) Result Code (failure modes).

(4) Reference (dictionary).

d. Data Append. Consolidates the new and historical LAT data, new and historical surveillance data, and MAERU data into the master database.

e. Validation. Will check data against the Navy Stock Catalog, Lot Data Card Database, and others as available, to ensure data accuracy.

CHAPTER 4.3

Mobile Ammunition Evaluation and Reconditioning Unit

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CHAPTER 4.3

Mobile Ammunition Evaluation and Reconditioning Unit

4.3.1 Mobile Ammunition Evaluation and Reconditioning Unit (MAERU)

4.3.1.1 General. In the past, serviceability of ammunition stocks at overseas locations was determined by visual inspection, sampling, and return of samples to CONUS for evaluation. Ammunition classified unserviceable as a result of inspection or evaluation was replaced and returned for maintenance. The length of time in a non-Ready For Issue (non-RFI) status pending evaluation or replacement, and the handling and transportation costs for return and maintenance, were excessive.

4.3.1.2 Purpose. The purpose of the MAERU is to reduce or eliminate the time lag between sampling and recertification as Ready For Issue (RFI), and reduce transportation and handling charges. MAERUs are formulated with the capability of performing in-place evaluation and on-site maintenance. MAERU services are available to area and storage site Commanders on a routine basis, or as specifically requested. They may be for separate evaluation or for combined evaluation and maintenance actions. MAERU operations are carried out with minimum disruption of the daily activities of the storage sites. They result in RFI certification of the entire storage site stockpile, less items that require Depot Level maintenance, which is beyond the MAERU capabilities, or are irreparable. MAERU services are also available, on a selective and reimbursable basis, for the evaluation and maintenance of similar munitions of U.S. origin in the possession of foreign navies.

4.3.2 Responsibilities.

4.3.2.1 Program Manager (NAVSEA Conventional Ammunition Program Office, NSWCDIV Crane).

- a. Provides overall program guidance and policy direction for all phases of MAERU operations.
- b. Approves 5-year program plans and initiating budgeting submissions.
- c. Exercises overall technical control of 2T Cog ammunition maintenance (NSWCDIV Crane Code 40 exercises technical control of 2E Cog items in coordination with NAVAIR and cognizant maintenance engineer-

ing activities. OT Cog items are coordinated with CMC (Code LMG) and NAVAMMOLOGCEN DET Fallbrook).

- d. Provides the financial support required to administer, maintain, and operate the MAERU.
- e. Issues work requests to Naval Weapons Station Seal Beach Detachment Concord for MAERU operations and for overall administrative and logistics requirements.
- f. Monitors overall MAERU operations for the purpose of ensuring effective and efficient operation at overseas stocking points.

4.3.2.2 NAVAMMOLOGCEN. NAVAMMOLOGCEN is responsible for providing overall guidance with respect to safety.

4.3.2.3 Naval Weapons Station Seal Beach Det. Concord Quality Assurance Lab.

- a. Provides administrative, logistic, and technical direction to the MAERU.
- b. Submits a 5-year program plan for MAERU operations to the PM eight months prior to the beginning of each fiscal year. The plan must provide for operations including travel, per diem and overtime, components, equipment, tools, consumable supplies, and material requirements for MAERU operations.
- c. Determines the need for scheduling and accomplishing pre-evaluation surveys. The survey will be preceded by obtaining lot-by-lot inventories of ammunition, and related components. The survey includes coordinating the planned effort with the Fleet logistics managers and the commands at the overseas storage locations. As a result of pre-evaluation surveys and associated surveillance studies, Naval Weapons Station Det. Concord determines the most feasible schedule and methods of evaluation and maintenance. An operational plan is developed for each of the storage activities to be serviced. The plan includes the general instructions for the operation of the unit and the specific sampling plan for each ammunition item to be evaluated and processed through a maintenance line.
- d. Conducts an audit to ensure that work has been completed satisfactorily, adjustments have been made to

the activity asset records, and the activity has all necessary data to submit inventory changes or adjustments.

e. Prepares and publishes a detailed summary for each activity. This lists the test results, maintenance actions accomplished, estimates of overall quality, information regarding inventory adjustments resulting from MAERU actions, evidence of deterioration, and recommendations for future MAERU actions. The summary is submitted to the appropriate Fleet logistics manager and PM within 90 days following the completion of the MAERU operations and audit.

4.3.2.4 Fleet Logistics Managers

- a. Forward requests for MAERU service to the PM.
- b. Assist Naval Weapons Station Seal Beach Det. Concord in establishing a schedule which will be compatible with storage activities and MAERU requirements.
- c. Ensure that adequate logistics support services such as material handling, local transportation, equipment, maintenance facilities, and labor are available at each of the storage activities.
- d. Ensure that the storage activities have completed action on the inventory adjustments which result from the MAERU actions.

4.3.2.5 Overseas Storage Activities.

- a. Report ammunition assets, receipts and expenditures in accordance with current instructions. Provide Naval Weapons Station Seal Beach Det. Concord with a lot-by-lot inventory by storage location, date of receipt, and source, when requested.
- b. Provide logistics support services such as material handling, local transportation, equipment, maintenance facilities, and labor required for MAERU operations, and provide for temporary storage of MAERU equipment and supplies prior to and following the MAERU deployment.
- c. Request disposition instructions for Navy-owned material found to be unserviceable as a result of MAERU quality evaluation, and which is not repairable by MAERU. CMC (Code LMG) will provide disposition instructions for OT Cog items.

d. Reflect condition code (C/C) and inventory adjustments in station records occurring as a result of MAERU operations.

4.3.3 Personnel Composition

4.3.3.1 Team Composition. A MAERU, headed by a Technician-In-Charge (TIC), consists of 2 teams. 1 team consists of 4-to-6 quality evaluation specialists. The other team consists of 6-to-9 ordnance workers. Test equipment and ammunition peculiar equipment for disassembly and assembly accompanies the 2 teams as required.

4.3.3.2 Personnel Roster. Naval Weapons Station Seal Beach Det. Concord maintains a roster of designated and eligible personnel available for duty with the MAERU. This includes personnel qualified for duty as TIC and Senior Quality Evaluation Technician (Senior QE). Selection of personnel from other activities is subject to the concurrence of the employee's home station, unless such duty is a condition of employment. TICs are usually quality evaluation oriented personnel.

4.3.3.3 Technician-In-Charge (TIC). A TIC, as an official representative of the Commanding Officer, Naval Weapons Station Seal Beach Det. Concord, is in charge of the evaluation and maintenance (reconditioning) phases of the MAERU operation. In the event that only the evaluation team is deployed, the Senior QE shall assume the listed duties of the TIC.

- a. Refers directly to Naval weapons Station Seal Beach Det. Concord any operational or personnel matters which cannot be resolved on-site by the TIC.
- b. Takes necessary precautions and mandatory measures to ensure that MAERU personnel are properly instructed and informed of the policies and regulations regarding security, restrictions, and curtailment of off station activities applicable to noncitizens of the host country.
- c. Submits requests relating to quality evaluation, maintenance equipment, and materials requirements to NWS Concord.
- d. Provides Naval Weapons Station Seal Beach Det. Concord, the storage site commander, and the Fleet logistics commander with reports of work progress in MAERU operations when units are active. These letter progress reports will adequately describe all action taken or contemplated by the MAERU in preparing and planning the schedules of operation, assembly, status of work completed, and estimated date of completion of MAERU operations.

e. Takes such steps as may be necessary to ensure the acceptable quality of reconditioned ammunition items.

4.3.4 Equipment.

4.3.4.1 Containers. The equipment is contained in two standard commercial ocean-going cargo containers. One container is fitted out with test and evaluation equipment (such as spin-test machines and primer-firing equipment). The other has maintenance equipment such as a fuze-removal machine and cartridge pull-apart equipment. Personnel and equipment associated with each team are capable of independent operation. When evaluation is completed, the evaluation team moves on to the next storage activity. The maintenance team completes the task at the first activity and then joins the evaluation team.

4.3.4.2 Container Rotation. Two complete sets of MAERU equipped containers exist. On completion of a deployment, the containers are returned to Naval Weapons Station Seal beach Det. Concord for replacement of supplies and reconditioning or upgrading as necessary, and the standby set is deployed. The standby set is available on-call for emergency deployment.

4.3.5 Deployment.

4.3.5.1 Inventory Request. In preparation for a routine deployment, NWS Concord requests by letter a lot-by-lot inventory from each storage activity. Activities with a low turnover rate of ammunition may be contacted 6 to 9 months in advance of projected deployment. Activities with a high turnover rate are contacted 30 to 60 days prior to deployment to ensure that inventories are current.

4.3.5.2 Pre-evaluation Survey and Planning Visit. A pre-evaluation survey and planning visit is made to each storage site to accomplish the following.

- a. Coordinate the forth coming MAERU operations at each site.
- b. Determine and arrive at an agreed to schedule for each activity and for the cycle.
- c. Verify significant inventory changes from the previous deployment and discuss major rework requirements.
- d. Arrange for support of the MAERU at each activity by local handling personnel, material handling equipment, transportation, work area or facility, and supplies.

4.3.5.3 Team Preparation. Upon receipt of a current year WR from the PM for MAERU support, Naval Weapons Station Seal Beach Det. Concord accomplishes the following.

- a. Selects team members, by message, 30 to 60 days prior to deployment.
- b. Conducts an indoctrination briefing for the TIC assigned to MAERU operations with respect to responsibilities in foreign countries. The TIC and each employee assigned to the MAERU group are subject to regular station personnel procedures set forth in the Federal Personnel Manual (FPM) and are expected to govern themselves accordingly. The TIC of a MAERU is thoroughly briefed prior to departure on matters pertaining to existing local and political conditions at overseas facilities.
- c. Develops a schedule of visits and operational plans for each storage location based on the verified inventory and the survey findings and agreements
- d. Arranges personnel travel itineraries and the shipment of the MAERU containers.

4.3.5.4 Operation Commencement. When the MAERU containers arrive, the site commander arranges for flat-bed trucks and hoisting equipment to move the units to the designated work area. Once the operation begins, the TIC is responsible for the following.

- a. Scheduling the various functions such as sampling inspection, testing, maintenance, and repackaging to keep an even work flow.
- b. Completion of the documentation as lots are reworked, including data card preparation and MIL-STD-129 Tag application.
- c. Preparation of a summary report upon completion of the operation at each site.

4.3.5.5 Final Report. The cycle is completed with the issuance of a final report to each overseas storage activity and the appropriate Fleet logistics managers. This is a detailed summary of the results of the MAERU operations including estimates of overall reliability by ammunition type, summarized test results, maintenance actions accomplished, and recommendations to adjust future MAERU testing frequency based upon evidence of changing deterioration trends.

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CHAPTER 4.4

Deficiency Reporting

4.4.1 Deficiency Reporting

4.4.1.1 General. There are many types of reports in ordnance management. These range from a report of loss of life and property damage resulting from an explosive accident, to a Report of Discrepancy (ROD) involving shipping-type item (issue) and packaging discrepancies, to a Missing, Lost, Stolen, or Recovered (MLSR) report resulting from an inventory discrepancy.

4.4.2 Explosive Mishaps

4.4.2.1 Scope. OPNAVINST 5102.1C issues procedures for reporting and investigating material (property) damage, personnel injury or death, Navy civilian occupational injuries or illness, and motor vehicle or explosive mishaps. All mishap reports (less aviation and nuclear weapon/propulsion) are combined in this directive to decrease the administrative burden in meeting DoD reporting requirements. "Mishap" is used to cover a variety of events resulting in material damage or personnel casualty, and also covers hazardous conditions that have the potential to cause damage or casualty. Chapter 5 of OPNAVINST 5102.1C provides guidance for reporting accidents, incidents, and malfunctions involving non-nuclear ordnance, explosive devices, explosive material, and military chemical ammunition.

4.4.2.2 Explosive Mishap Categories. Explosive mishaps range in severity from major, with multiple fatalities or serious injuries and extensive material damage, to minor mishaps, with no injuries or material damage except to the ordnance involved. All explosive mishaps require investigation or analysis for determination of causes and remedial action to prevent recurrence. The greater the severity, the higher the priority and intensity of effort for resolution and control of future losses.

a. **Major Explosive Mishaps.** OPNAVINST 5102.1C, Chapter 5 of, contains casualty and damage criteria and other factors for determining reporting urgency for major mishaps. Major explosive mishaps are those that result in injury or material damage and are to be reported by message. Whether severity demands an OP-IMMEDIATE precedence requiring a telephone report, or damages are limited to \$10,000-\$199,999 and reportable by routine message within 48 hours, both are ma-

jor explosive mishaps differing only in severity. Some mishaps with damage less than \$200,000 may have greater potential for recurrence or greater effect on operational readiness than a mishap involving greater damage, injury, and loss of workdays.

b. **Minor Explosive Mishaps:** Minor explosive mishaps are isolated accidents or failures for which the potential for injury or damage is remote (e.g., down-range premature duds in deep water or in designated target areas). A high ratio of down-range prematures/duds during an exercise or operational expenditure is cause for an investigation or a reliability evaluation. Minor explosive mishaps should be reported within 20 days, preferably by mail, to enhance the accumulated databases for ordnance performance.

4.4.2.3 Explosive Mishap Occurrences. Explosive mishaps may occur as a result of:

a. Some external force during processing in the logistic cycle such as impact or friction,

b. Some external phenomena such as fire, flooding, lightning, electrostatic discharge etc. while in storage, or expenditure (intended or accidental).

c. Mishap occurrences may be categorized as follows:

d. **Support Operations Mishaps.** Any event involving non-nuclear ordnance, explosives, or chemical agent that results in a low-order or a high-order explosion, release of chemical agent, or damage to the explosive item being processed during manufacturing, loading, assembling, disassembling, demilitarizing, handling, transport operations, or while in storage. Included are "near-mishap" events that, except for chance, would have resulted in an explosive mishap.

e. **Mishaps During Planned Expenditure.** A deliberate actuation, release, or launching in combat, or non-combat expenditure of ordnance which fails to function in the designed manner. Examples include in-bore explosions, close-aboard prematures, hangfires, down-range prematures, misfires, or duds.

f. Unplanned Functioning Mishaps. An accidental or inadvertent actuation, release, or launching of ordnance which, when armed, functions as designed irrespective of casualty or damage, or when unarmed becomes a potential hazard in friendly territory or inshore waters. Included are the deliberate emergency jettisoning of ordnance in friendly territory.

g. Hazardous Conditions Potential Mishaps. Any defect or condition found in an ordnance item or component on visual examination or local test which might result in an explosive mishap. The following are included in this category.

(1) The recovery of jettisoned, abandoned, or lost ordnance items or explosives in public areas which, if found by untrained civilian or military personnel, represent a potential explosive hazard.

(2) The recovery of ordnance or explosive material of known or undetermined hazard in the possession of the private sector by Explosive Ordnance Disposal (EOD) personnel.

(3) The emergency disposal by EOD personnel of dangerous military explosive items recovered anywhere in friendly territory.

(4) The observation of a near mishap, an unnatural occurrence, or the unauthorized alteration or misuse of ordnance, which has the potential for casualty or damage during the alteration process or upon ultimate use.

4.4.2.4 Accident Responsibilities (On Station or Aboard Ship). It is the responsibility of the activity or command experiencing the mishap to conduct a local investigation and report all reportable explosive mishaps, in accordance with OPNAVINST 5102.1C. A local investigation is an analysis and account of a mishap based on an examination of all factors. Information gathered by the local investigation is required for the reporting elements contained in appendix B of OPNAVINST 5102.1C. In addition, the local investigation is the first step in determining the basic cause of a mishap and in formulating local corrective action. In many cases sufficient evidence may be available in the mishap report to arrive at a determination and to direct corrective action that may be required.

4.4.2.5 Accident Responsibilities (Off-Station). Mishaps occurring during off-station shipment of ordnance by commercial or government carrier are of major concern to the Navy as to public safety, particularly in the case of train wreck or truck accidents where ordnance cargo is damaged or scattered outside the railcar or truck trailer, and for as-

essment of damage to the ordnance cargo and determination of commercial carrier liability.

a. NAVSEAINST 8020.13A is the Navy's governing instruction for transportation accident prevention and emergency response involving DoD ordnance. The instruction outlines preventive measures, emergency response action responsibilities, and important contact phone numbers for the Army Operations Center (AOC) and other sources of assistance. The NAVSEAINST specifies accident reporting information to be included on each Government Bill of Lading (GBL), SF 1104, accompanying a shipment of DoD ordnance. This information provides local authorities with all of the information required to properly notify DoD in the event of an explosive mishap on public roadways.

b. Unless otherwise directed by OSD, the Navy will decide on the need to perform safety investigations of transportation accidents involving its shipments. Investigations for future accident prevention purposes are encouraged. Duplication of effort by the National Transportation Safety Board (NTSB) and DoD component should be avoided. The Navy will cooperate with NTSB investigations.

c. Completed investigation reports will be forwarded to the OSD Safety and Occupational Health Policy Directorate with an additional copy furnished to the DDESB and the Military Traffic Management Command (MTMC).

d. Determination of damage, internal as well as external, and the assessment of repairs to return the ordnance items to serviceable condition are the responsibility of certified personnel at the ordnance activity receiving the ordnance involved in the accident.

4.4.2.6 Support Operation Mishap Corrective Action Responsibilities.

a. Mishaps during manufacturing, loading, assembly, disassembly, maintenance, or demilitarization are generally attributable to personnel error (noncompliance with safety precautions or prescribed operating procedures), equipment failure or defective equipment, or unknown causes.

(1) Local command is to instruct and train or retrain personnel in operating procedures and safety precautions, and to initiate a program of closer supervision, for mishaps attributed to personnel error. For major mishaps depending on potential hazard implications, the PM is responsible for the review and revision, if appropriate, of

DMWRs and safety precautions for all operations of this type. Recommended changes to safety precautions should be forwarded to all applicable commands/activities.

(2) When the cause of a mishap is attributed to equipment failure or defective equipment, the local command is to review equipment inspection and maintenance programs for greater emphasis on preventive maintenance, and request assistance in equipment redesign/modification if appropriate.

(3) When personnel error and equipment malfunction or failure are eliminated, the explosive item in process must be considered as suspect and the exact failure mode reported as unknown. Depending on the severity of damage and injuries, the item process should be discontinued.

b. Mishaps occurring during ordnance handling or transportation, whether associated with in-process operations, receipt, issue, restowage operations, or transfers at sea are generally caused by equipment failure, defective equipment, or personnel error (noncompliance with safety precautions or prescribed equipment operating instructions).

(1) When local investigations indicate personnel error, local commands shall initiate a corrective program of training and instructions in explosive safety, non-nuclear ordnance transporting, and handling equipment operations. NAVAMMOLOGCEN and NWS Earle are responsible for changes to safety precautions and operating procedures for transporting and handling ordnance.

(2) Mishaps attributed to defective equipment or equipment failure during handling or transportation are generally avoidable by local preventive maintenance and inspection programs.

4.4.2.7 Hazardous Condition, Potential Mishaps Corrective Action Responsibilities. Report all mishaps in accordance with OPNAVINST 5102.1C.

a. Damaged ordnance discovered during stowage, surveillance, or receipt inspection is generally the result of rough handling or a prior unreported mishap. Usually this damage is limited to a single item, the quantity of unit of packing, or to a pallet load. Local commands should perform the following actions.

(1) Instruct all station personnel in the necessity for mishap avoidance and for reporting to supervisors all mishaps of damage or rough handling as they occur.

(2) Report all transportation-type discrepancies (i.e., shortages, losses, or damage occurring in transit) found during receipt inspection in accordance with NAVSUPINST 4610.33 on a Transportation Discrepancy Report (TDR). SF 361. If loss appears to be from theft, submit an MLSR report as described in paragraph 4-4.8.

(3) Set damaged ordnance aside for inspection and classification by quality evaluation personnel.

b. Non-nuclear ordnance damaged by flooding (e.g., actuation of magazine sprinkler systems afloat) should lead to an inspection for the presence of water in ordnance containers, in cartridge and propelling charge tanks, and under waterproof protective caps of projectiles. The mishap report should include details on quantities showing evidence of water damage. Suspect ordnance should be tagged indicating the reason for reclassification and returned to an ordnance activity ashore at the first opportunity.

c. Defective ordnance discovered during stowage; surveillance; preparation of subassemblies and components for new production, assembly, or loading; or during preparation/disassembly of rounds for maintenance are usually the result of faulty manufacture or prior maintenance operations. Critical defects, such as missing gas check seals or protruding primers, may be prevalent in other rounds of the ammunition lot or lot stratum and should be reported by message.

d. Ordnance found on private property or in the custody of private individuals has a potential for catastrophic or major mishaps in the hands of untrained civilian personnel. EOD personnel accepting custody of such ordnance should determine, if possible, how it was obtained, where it was found, and other information reported in accordance with OPNAVINST 5102.1C and NAVSEAINST 5530.1A.

4.4.2.8 Unplanned Functioning Mishaps Corrective Action Responsibilities

a. Unplanned functioning mishaps are generally caused by personnel error (such as dropping or striking a device containing a percussion primer, snagging a firing lanyard or cotter-pin pull-ring), or emergency conditions requiring the deliberate jettisoning of ordnance.

b. Local commands conduct investigations, review local and published safety precautions, provide instruction or training emphasizing safe operating procedures, and report findings in accordance with OPNAVINST 5102.1C. Jettisoned ordnance should be reported if it oc-

curs in friendly territory or in-shore waters with the possibility of its recovery by the private sector.

4.4.2.9 Planned Expenditure Mishaps Corrective Action Responsibilities

a. Planned expenditures, in combat or noncombat operations, are considered as beginning with the placement of an ordnance item into a weapon or launcher with intentions to fire or launch the item. For automatic loading weapon systems, this includes the placement of the ordnance item in the loading/firing cycle. Naval ordnance is designed to safely and reliably negotiate cycling, ramming, chambering, or launcher loading, firing, launching, and effective performance on target. In some cases this includes case extraction and return of weapon to battery for maintaining a required rate of fire. Mishaps occurring during expenditure are attributable to one or more of ordnance and weapon system interface incompatibilities, defective ordnance, defective weapon system or equipment, or personnel error (noncompliance with safety precautions or prescribed operating procedures).

b. Mishaps are primarily due to the effects of external forces on an ordnance item during its life cycle from production through release for expenditure. These forces or effects are varied, unpredictable, and generally not repetitive. Planned expenditure mishaps are more likely to be repetitive, given the same ordnance item and weapon system configuration and the same set of conditions. Repetitive major mishaps which result in lot or lot strata suspensions can result in a serious reduction in Fleet readiness. Intensive investigations and rapid response corrective actions are the general rule for major mishaps occurring during expenditures.

(1) All activities engaged in combat or noncombat expenditure of non-nuclear ordnance experiencing mishaps or malfunctions should discontinue the use of the item, pending local investigation and assessment of probable causes.

(2) When local investigation indicates an obvious cause for a minor mishap, such as failure to set point detonating fuzes to "on" (personnel error), local corrective action is considered sufficient grounds for resumption of use.

(3) For all other mishaps where ordnance fails to function in the manner for which designed and local investigation does not indicate a probable cause, reports shall be submitted as required by OPNAVINST 5102.1C. Depending on the degree of actual or potential casualties and dam-

age, and operational necessity (combat), usage may be resumed shifting to other ammunition lots or ordnance types if possible.

(4) Because explosive accidents and major malfunctions are usually characterized by the destruction or loss of the offending item, the difficulty in positive determination of cause is magnified. All fragments and remains of the item should be collected for examination and tests. Photographs of damages are desirable. Instances have been noted where minor malfunctions or incidents have resulted in the unnecessary disposal of the item. In most cases, the hazard associated with an incident or minor malfunction is at the instant of occurrence or immediately thereafter. After an approved interval, an item sustaining a minor mishap should be tagged, set aside, and returned to the nearest issuing activity ashore for investigation tests or other disposition as may be directed by the PM through the IM. Nothing in the above is to be construed as prohibiting the immediate disposal of an item that in the opinion of the commanding officer is considered to constitute an imminent hazard.

4.4.3 Malfunction Investigations

4.4.3.1 General. Every explosive mishap requires a malfunction investigation. The majority of explosive mishaps occurring in the Navy are of the magnitude and circumstances that only require a local investigation to determine the cause and appropriate corrective action as described within paragraph 4-4.2. and will not be discussed further. Some explosive mishaps require investigations requiring involvement by external management and engineering activities.

4.4.3.2 Investigation Team. The severity of the mishap, the ordnance/weapon system involved, and the location of the mishap determines which command directs the investigation and which commands will provide representatives on the investigation team. The investigation responsibilities are basically the same regardless of who assigns them and to whom they are assigned. The following will be based on the ordnance item PM directing the investigation in accordance with NAVSEAINST 8025.1A.

4.4.3.3 Emergency Reaction Plan for Catastrophic Explosive Mishaps. Catastrophic explosive mishaps resulting in fatalities, severe injuries, or equipment damage mandate immediate action to preclude a recurrence under the same or similar circumstances. The following steps are critical to preventing a recurrence.

a. Identify, locate and suspend all issue and use of the non-nuclear ordnance and equipment involved pending an investigation.

b. Activate a standby investigation team of personnel with technical expertise in all phases of explosives and ordnance technology.

c. Make available all ordnance laboratories, firing ranges, testing and technical facilities, and all configuration, performance and test experience data on file.

d. Make available for immediate deployment a technical team for on-site investigations and the collection of material and verbal evidence.

e. Establish a point-of-contact (POC) to provide reports of investigation progress, resolution of cause, and corrective action.

4.4.3.4 Action

a. Immediate action on receipt of a telephone report (from reporting activity or from a third party in the chain of command) will be taken, including the following.

(1) The PM will alert appropriate ISEAs, DAs, and the SC by telephone, providing details as received and the Date-Time Group (DTG) of the confirming mishap message report.

(2) The PM will alert NAVAMMOLOGCEN by telephone and, depending on the circumstances and adequacy of information, will direct the suspension of the lot or type of non-nuclear ordnance involved.

b. Priority action is taken as follows when a mishap message report is received.

(1) The PM, ISEAs, DAs, and the SC evaluate accuracy of the ordnance identification as reported, including projectile, propelling charge, and components, in comparison with item configuration and lot data files. They identify lot strata parameters containing primary explosive components of the same lot, same component manufacturer, or same loading and assembly production run.

(2) On the day of evaluation completion, ISEAs, DAs and the SC will provide the PM with the following information by telephone.

(a) Acknowledgment of mishap message report receipt (negative reports required).

(b) Results of the identification evaluation.

(c) Comments, additional information required, and primary suspected failure modes (based on similar past mishaps).

(d) If reported circumstances are unprecedented, identify by name and rank/grade the individual designated as an investigative team member.

c. The PM will do the following within 24 hours of a mishap message report receipt.

(1) Confirm prior telephone direction to NAVAMMOLOGCEN by sending a priority message confirming or amending lot or type originally suspended in accordance with ISEA, DA, and SC identification evaluations.

(2) Send a priority message to the ship or activity, Fleet Commander, and Type Commander advising that a special technical investigation team is being formed, designating the technical investigation team leader, and requesting the following.

(a) Fragments and residual material be retained for analysis and investigation.

(b) Suspected non-nuclear ordnance be off-loaded at the earliest opportunity and held for investigation.

(c) Any additional information applicable to the investigation be provided.

(d) Confirmation of previously reported lot information (if there is questionable data).

d. The decision to deploy a team to the site will be dictated by severity or circumstances of the mishap, or by direct request from OPNAV, COMNAVSEASCOM, Fleet or Type Commander.

(1) Upon deciding to deploy a team to the site, the PM is responsible for the following.

(a) Sending a message to the ship or activity and the appropriate chain of command addressees, identifying all members, their Estimated Time of Arrival (ETA), and team support requirements.

(b) Providing required travel funding for investigation team members.

(c) Assembling the investigation team members for an initial meeting.

(2) If an onsite investigation team is not required, the PM will be responsible for the following.

(a) Assigning the investigation responsibilities to appropriate engineering and other support activities, and provide funding to participate in the investigation if required.

(b) Send a message to the ship or activity and the appropriate chain of command addressees, notifying them that the technical investigation will be conducted offsite.

4.4.3.5 Investigation Responsibilities. The following responsibilities will be carried out by the assigned activity and/or its representative on the deployed investigation team.

a. ISEA

(1) Review mishap/malfunction reports on assigned items and submit comments and recommendations to the PM.

(2) Coordinate the development of a Malfunction Investigation Plan (MIP), and monitor and report progress made by the assigned DAs and SCs, and NAVAMMOLOGCEN support.

(3) Coordinate the preparation of the final malfunction investigation report.

(4) Provide immediate response via telephone to the PM on assigned catastrophic mishap emergency reaction plan action items.

b. DA

(1) Review major mishap/malfunction reports. Submit comments and recommendations to the PM within 24 hours by telephone on probable causes, reclassification actions, and investigation requirements. Submit comments on minor mishaps/malfunctions, as appropriate.

(2) Provide immediate telephone response to the PM on assigned catastrophic mishap emergency reaction plan action items.

(3) Develop or participate in the development of an investigation plan and the scheduling of required tests when an investigation is directed by the PM. Coordinate with other DAs, ISEAs, the SC, and NAVAMMOLOGCEN as required.

(4) Conduct or participate in the testing of samples or failure vehicle models, and document results for the final malfunction investigation report.

(5) Coordinate the shipment of test samples and related items with NAVAMMOLOGCEN, and with the consignees for delayed shipments.

(6) Advise the PM if funds, in addition to annual Fleet support funds, will be required for special investigations and tests.

c. SC

(1) Review mishap/malfunction reports and submit comments and recommendations on probable causes, reclassification actions, and investigation requirements. Submit comments within 24 hours by telephone for major mishap/malfunctions, and when appropriate for minor mishap/malfunctions.

(2) Provide immediate telephonic response to the PM on assigned catastrophic mishap emergency reaction plan action items.

(3) Schedule, perform, and report results of investigations and laboratory tests assigned by the PM or as contained in a malfunction investigation plan.

(4) Provide historical surveillance test and Fleet performance data to the PM or DA/ISEA as required.

d. NAVAMMOLOGCEN

(1) The temporary or permanent withdrawal from issue and use of the ordnance as directed by the PM.

(2) The service-wide unilateral reclassification of non-nuclear ordnance by the issue of a NAR(s) based on PM direction. Subsequent to a mishap investigation, the ordnance may be released for use or subjected to further reclassification by additional NAR message(s).

(3) Ensure that the IOC and other Service users of Navy ordnance, including countries supported by the Security Assistance Program (SAP), are addressed on NARs as appropriate.

(4) Maintain a permanent record of all service-wide reclassifications.

(5) Arrange for the shipment of required samples and related material for DA/SC investigations.

(6) Obtain inventories of reclassified items as required by the PM, ISEA, DAs, or the SC.

4.4.3.6 Message Addressees. The PM and NAVAMMOLOGCEN are required action addressees on all mishap/malfunction message reports. The determination to release the item to general usage, by direct response to the reporting activity or to reclassify it by NAR, is required in the normal response interval for a routine (5 days) or a priority (24 hrs) action message. Information addressees with support responsibilities in this determination are to be guided by this policy.

4.4.3.7 Final Ammunition Disposition by the PM. From the evidence and circumstances in the mishap report, and findings and recommendations of the investigation report, the PM will determine one of the following.

a. Determine that issue and use of the item lot, lot strata, or type as serviceable (C/C A) material may continue. For this determination the PM will advise the reporting activity and all addressees that suspension from use is not warranted and that local usage may be resumed.

b. Determine that issue and use may continue, but with qualifications. The PM will direct NAVAMMOLOGCEN to reclassify the item lot, lot strata, or type to C/C B (with qualifying notation), C (priority of issue), or N (for issue and use in an emergency only).

c. Determine that issue and use may not continue under any circumstances. The PM will direct NAVAMMOLOGCEN to withdraw the item lot, lot strata, or type from issue and use permanently as C/C H (unserviceable - condemned), C/C P (unserviceable - for disposal after reclamation of required components), C/C F (unserviceable - requires major maintenance including component replacement), or as C/C E (unserviceable - requires 100 percent screening for defects).

4.4.3.8 ISEA Additional Responsibilities. In addition to specific malfunction investigation responsibilities, the ISEA is also responsible to the PM for the following.

a. Developing and maintaining a database of all mishaps on assigned ordnance, by NALC, Notice of Ammunition Reclassification (NAR), Security Assistance Management Control (SAMC) number, ALN, category of mishap, lead investigator, and status.

b. Publishing a summary Malfunction Status Report periodically, as required by the PM.

4.4.4 Notice of Ammunition Reclassification System

4.4.4.1 General. The degree of ordnance serviceability is defined for ordnance management by the assignment of material C/Cs. All newly produced/procured non-nuclear ordnance that is completely finished, tested, and legally accepted by the receiving activity, is assumed to be "serviceable - C/C A" material. Over a period of time, environmental effects, damages sustained in handling, and deterioration due to aging result in changes in the degree of serviceability. Stock record changes to C/C can occur as a result of local reclassification or directed reclassification by the PM. Local reclassification becomes necessary when QE personnel inspect material in storage or received from other activities, or upon segregation of non-nuclear ordnance in an undetermined condition (C/C K), and determination is made that its original condition is no longer valid. Local reclassification is limited to individual items or those stocks locally inspected. Defects are not lot- or type-oriented, except for local stocks or lots that have exceeded their MCPs. Changes in wholesale stock items occur in the same manner. IOC activities prepare an Ammunition Condition Report (ACR) for submission to the owning Service ICP for review and disposition of the material as a result of the new C/C. Unilateral reclassification by issuing a NAR is required when the following occurs.

a. QE periodic test results indicate service wide stocks of an ammunition lot or stratum of lots are no longer serviceable.

b. Malfunction investigations indicate inherent design or manufacturing defects are present in a lot or lot stratum that may exist elsewhere in the stockpile.

4.4.4.2 Description. NARs are distributed in message format to Address Indicating Group (AIG) 181 to pass information directly to all stocking activities and potential users. Only a few NARs apply to non-nuclear ordnance carried aboard submarines and submarine support ships. Therefore, COMSUBLANT and COMSUBPAC monitor NAR messages for their units and transmit only those applicable to them. Individual NARs are numbered consecutively in each calendar year (e.g. 201-96). Each message normally contains more than one NAR. The

NARs serve as supplements to NAVSUP P-801/TW024-AA-ORD-010. NAR messages are canceled when they are incorporated into a change or there is a revision to NAVSUP P-801/TW024-AA-ORD-010. Procedures for processing NARs by ordnance activities are contained in chapter 2 of the TW publication. A similar system of reporting mishaps and malfunctions, their analysis and investigation, and reclassification action notices exists in the Army. Based on the interService agreement on exchange of malfunction and reclassification actions, Army reclassification of common usage items in Navy stocks are usually concurred in and disseminated to Navy users by NARs. USMC class V(W) mishaps/malfunctions are reported and investigated via Army or Navy channels, depending on which Service is the original design and procurement agent. All USMC reclassifications are disseminated by NARs. The Navy and USMC reserve the right to nonconcur in Army reclassifications of common items in their stocks, if readiness factors or circumstances of the Army mishap/malfunction are not likely to be encountered.

4.4.4.3 Unserviceable - Suspended, Limited Use Ammunition NAVSUP P-801/TW024-AA-ORD-010. This TW publication is the USN/USMC comprehensive listing of all non-nuclear ordnance, and certain commercial explosive items (such as cartridge-powered stud drivers, dynamite, etc.), which are not suitable for unrestricted issue and use. Permanently suspended lots or lot strata are listed, until rolled-up as an obsolete and unsatisfactory type, and retained on the listing in case such items later reappear. NAVSUP P-801/TW024-AA-ORD-010 is listed in DoDIC/NALC sequence, and alphabetically for items and components without assigned DoDIC/NALCs. Entries indicating a release of ordnance are also listed, but appear in only one change or revision. This publication is applicable to all Service units/activities storing and/or handling Navy, Marine Corps, or Coast Guard owned non-nuclear ordnance and to foreign navies purchasing USN/SMCA manufactured ordnance. Limitations imposed on material by the publication do not supersede cautions/warnings/restrictions in technical manuals, ordnance pamphlets, firing tables, or other applicable documents. Those publications shall be followed in addition to the limitations contained in NAVSUP P-801/TW024-AA-ORD-010. A material C/C listed in NAVSUP P-801/TW024-AA-ORD-010 does not necessarily override a locally imposed C/C, but shall do so if the local code is less restrictive. Although published by direction of COMNAVSEASYSOM, individual entries may be included at the direction of CNO, CMC, or COMNAVAIRSYSOM.

4.4.5 Transportation Discrepancy Report

4.4.5.1 Scope. The Navy's governing instruction for TDRs is NAVSUPINST 4610.33, which is a Joint Service instruction. (NAVSUPINST 4610.33 applies to all US commercial carriers except Military Airlift Command (MAC) or ocean carriers.) TDRs, SF 361, are used to accomplish the following.

- a. Notify, or confirm notification to, carriers of a problem with a shipment.
- b. Notify a carrier to pick up damaged material and to show where the material is located.
- c. Request information from any source to assist in resolving a discrepancy (such as requesting pricing data from a shipping activity or inventory control point).
- d. Reply to a request for information.
- e. Advise action agencies that the discrepancy previously reported was either changed or canceled.
- f. Document problems at a stop-off or transshipment point, for action by the consignee.
- g. Report all transportation discrepancies that have not been resolved.
- h. Document discrepancies when services ordered by the Government are not performed by the carrier (e.g., ordnance not delivered on time).
- i. Adjust inventory and financial records.
- j. Support claims against carriers or contractors.

4.4.5.2 Applicable Forms. Form DD 173/2 (Joint Message Form) will be prepared for transportation discrepancies applicable to CLASSIFIED or PROTECTED (including hazardous material) shipments. DD 470 (Cargo Outturn Report) is used as a summary and transmittal sheet for a consolidated TDR/DD 788 (Private Vehicle Shipping Document) or commercial carrier form file when a sealift carrier is suspected of being the cause of the loss or damage.

4.4.5.3 Discrepancies Excluded by NAVSUPINST 4610.33.

- a. Reporting of equipment offered by carriers that cannot meet the safety requirements for moving hazardous materials.

b. Reporting, adjusting, and accounting for supply discrepancies; preservation, packaging, packing, and supply item identification marking, and; lost or damaged parcel post shipments (see paragraph 4-4.6).

c. Discrepancies found in FMS or grant aid shipments not moving in the Defense Transportation System.

d. Any problem with Transportation Control and Movement Documents (TCMDs).

4.4.5.4 Major Discrepancy Types

- a. Astray.
- b. Shortage.
- c. Pilferage.
- d. Theft.
- e. Damage.
- f. Vandalism.
- g. Overage.
- h. Special contract or carrier services not provided.
- i. Entire shipment not received.

4.4.5.5 Responsibilities. Military Traffic Management Command (MTMC) is the responsible Executive Agent for managing the DoD worldwide cargo loss and damage reporting and analysis system which includes TDRs. Command Transportation Officers will perform the following functions.

a. Document and submit TDRs on all transportation discrepancies in shipments received, in accordance with NAVSUPINST 4610.33.

b. Investigate and gather facts relating to each discrepancy in shipment to support Government claims against the carrier.

c. Take necessary TDR corrective actions.

d. Respond to requests for additional information within set timeframes.

e. Submit an MLSR report as described in paragraph 4-4.8. Notify supporting security/law enforcement

element immediately upon learning of discrepancies which indicate possible security compromise, theft, vandalism, unexplained loss, or any other activity that may warrant their investigation.

4.4.6 Report of Discrepancy

4.4.6.1 Scope. The Navy's governing instruction for RODs, SF 364, is NAVSUPINST 4440.179A. RODs are used to accomplish the following.

a. Identification, reporting, and resolution of discrepant shipments occurring in the DoD logistics system, when the discrepancy is due to shipper error.

b. Identification, reporting, and resolution of discrepant shipments of new production material and reworked material. Also included are discrepancies on material received from contractors, other supply officer (Navy to Navy) transfers, and discrepancies involving shipments to or from Foreign Military Sales, Grant Aid, and Military Assistance Program customers.

4.4.6.2 Excluded Discrepancies

a. Unsatisfactory material involving local base or station warehousing actions to or from internal or satellite storage sites. This exclusion does not apply when a transfer of ownership occurs from one command to another as part of the local move (i.e. in a transfer from the station host to a tenant).

b. Transportation-type discrepancies covered by NAVSUPINST 4610.33 on a TDR, SF 361.

c. Product deficiencies resulting from design, material, or procurement attributable to nonconformance to contractual requirements or specifications are reported in accordance with SECNAVINST 4855.3A, on a Quality Deficiency Report (QDR), SF 368.

4.4.6.3 Responsibilities. Activities submitting RODs are responsible for submitting them correctly and within the timeframes specified in NAVSUPINST 4440.179. Activities responding to RODs are responsible for researching discrepancies and responding within the timeframes specified in NAVSUPINST 4440.179.

4.4.7 Financial Liability Investigation of Property Loss (FLIPL) Report.

4.4.7.1 Scope. The FLIPL replaces the Report of Survey dated Oct 1984 as the form used to account for and report lost, gained, damaged, or destroyed government property. DoD Manual 7200.10-M and NAVSUPINST

4440.115 provide policy and procedural guidance for the FLIPL.

4.4.7.2 Report Form. The form for submitting a FLIPL report is the Form DD 200.

4.4.7.3 Reporting Requirements. A unit/activity is required to submit a FLIPL report for the following types of adjustments.

- a. Unresolved physical inventory adjustments, regardless of dollar value, on a sensitive or classified item.
- b. Unresolved physical inventory adjustments, equal to or greater than \$2500, on a pilferable item.
- c. Physical inventory adjustments, equal to or greater than the activity specified causative research threshold, when research has determined that theft, fraud, or negligence is suspected.
- d. Any discrepancy (other than those addressed above) which requires, but has not been resolved by, causative research. For these errors, complete DD 200 only through block 11.

4.4.7.4 FLIPL Objectives.

- a. To summarize causative research results.
- b. To substantiate unresolved financial and inventory adjustments.
- c. To provide relief from financial liability.

4.4.8 Missing, Lost, Stolen, or Recovered Report

4.4.8.1 Scope. In compliance with OPNAVINST 3100.6G, each activity will ensure submission of an MLSR report for reportable Arms, Ammunition and Explosives (AA&E) that are stolen, lost, unaccounted for, or recovered. This includes gains or losses due to inventory adjustments. Higher echelon commands in a unit's chain of command may impose additional reporting requirements. However, the requirements of OPNAVINST 5530.13B are mandatory and will not be modified or waived.

4.4.8.2 Reporting Requirements. As a minimum, the loss, theft, recovery, or inventory adjustment of the following ordnance will be reported.

- a. Category I missiles and rockets.

- b. 100 rounds of ammunition smaller than 40 mm; individual rounds of 40 mm and larger ammunition.

- c. Individual mortar, grenade, and missile rounds.

- d. Individual land mines, demolition charges, and blocks of bulk explosives.

- e. Other items with 10 or more pounds of net explosive weight.

- f. Any Category I or II item not otherwise included above.

4.4.8.3 Significant Incident Reporting. Activities will report "significant" incidents within 48 hours by message reports, detailing the circumstances surrounding such incidents to CNO (N09N1), with copies to the chain of command and NSWCDIV Crane. "Significant" incidents include loss or theft of the following ordnance.

- a. One or more missile or rocket rounds.

- b. Over 5,000 pounds (or 20,000 rounds of .38 caliber) of ammunition smaller than 40 mm; or five rounds or more of 40 mm and larger ammunition.

- c. Any fragmentation, concussion, or high explosive grenades (including artillery or ground burst simulators), or other types of simulators or devices containing explosive materials.

- d. One or more mines (antipersonnel/antitank).

- e. Demolition explosives including detonation cord, blocks of explosives (C-4), and other explosives.

- f. Other Reportable Significant Incidents.

- (1) Armed robberies or attempted armed robberies.

- (2) Forced entries or attempted forced entries in which there is physical evidence of the attempt.

- (3) Evidence of terrorist involvement.

- (4) Incidents that cause significant news coverage, or appear to have the potential to cause such coverage.

- (5) Evidence of trafficking, such as bartering for narcotics or taking AA&E across international borders, regardless of the quantity of AA&E involved.

CHAPTER 4.5
Technical Manuals

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CHAPTER 4.5

Technical Manuals

4.5.1 Technical Manuals.

4.5.1.1 General. Technical manuals and publications are used for a variety of purposes.

a. Identify specific design, safety, handling, maintenance, or storage specifications for a specific ammunition item or group of items.

b. Identify general design, safety, handling, maintenance, or storage specifications for a group of ammunition items.

c. Provide desk reference documents for ammunition management.

4.5.1.2 Governing Instruction. NAVSEA technical manuals are governed by NAVSEAINST 4160.3 and S0005-AA-PRO-010.

4.5.1.3 Publication Listing. This section identifies the technical manuals and publications that cover various surface ammunition items and processes, and what command has been assigned as the Technical Manual Maintenance Activity (TMMA).

4.5.1.4 Publication Requisitioning. Manuals and publications listed in figure 4-5-1 are available to DoD

activities by referring to NAVSUP Publication P-2002 for requisitioning instructions. Activities may be placed on the distribution lists for these manuals by application to the Commander, Port Hueneme Division, Naval Surface Warfare Center (Code 5B61), 4363 Missile Way, Port Hueneme, CA 93043-4307.

4.5.2 Technical Manuals Surface Ammunition Technical Manuals. The technical manuals and publications listed in figure 4-5-1 provide detailed information for surface ammunition items. These technical manuals and publications are to be referred to as the authoritative source of information.

4.5.3 Technical Manuals Reporting Technical Manual Deficiencies. Any command identifying a deficiency, problem, or providing a recommendation relating to a technical manual may use a NAVSEA (User) Technical Manual Deficiency/Evaluation Report (TMDER), NAVSEA Form 4160/1 located in the back of each manual. The user must completely and accurately fill out the form and mail it to the preprinted address so that appropriate action can be taken on the deficiency/evaluation. It is important to note that the preprinted form can only be used for the manual in which it is in due to the preprinted information.

MANUAL NUMBER	TITLE	TMMA (Command/Code)
OP 2135	Ice Demolition	NSWCDIC Crane Code 4023
OP 2211 Vol 1	Surface Rockets	NSWCDIC Indian Head Code 3810A
OP 2211 Vol 2	Surface Rockets	NSWCDIC Indian Head Code 3810A
OP 3519	MK 131 Mod 1 Line Throwing Launcher	NSWCDIC Crane Code 4023
SW010-AD-GTP-010	Small Arms & Special Warfare Ammunitions	NSWCDIC Crane Code 4023
SW010-AE-GYD-010	NAVSEA Surface Ammunition Management	NSWCDIC Crane Code 4023
SW010-AF-ORD-010/ NAVAIR 11-1-117	Identification of Ammunition	NSWCDIC Crane Code 4023
SW010-AG-ORD-010	List of Explosives for Navy Munitions	NSWCDIC Indian Head Code 9310
SW010-AH-ORD-010 (C)	Armament of Naval Vessels	NSWCDIC Crane Code 4026
SW012-AA-MMA-010	CAIMS Complete Round Dictionary (A through G	NAVAMMOLOGCEN Code 62
SW012-AA-MMA-020	CAIMS Complete Round Dictionary (H through V	NAVAMMOLOGCEN Code 62
SW020-AC-SAF-010/020/030	Transportation & Storage Data for Ammunition	NWS Earle Code PHS&T
SW023-AA-ORD-010	Shipboard Ammunition and Weapons Data	NSWCDIC Indian Head Code 3810
SW026-AA-URD-010	Ammunition Disposal Inventory Management System	NSWCDIC Crane Code 4022
SW030-AA-MMO-010	Navy Gun Ammunition	NSWCDIC Indian Head Code 3810A
SW050-AB-MMA-010/ NAVAIR 11-15-7 Vol 1	Pyro Screening/Marking/Countermeasure Devices	NSWCDIC Crane Code 4023
SW050-AB-MMA-020/ NAVAIR 11-15-7 Vol 2	Pyro Screening/Marking/Countermeasure Devices (Obsolete and Unserviceable Items)	NSWCDIC Crane Code 4023
SW050-AC-ORD-010/ NAVAIR 11-15-8	Toxic Hazards Associated with Pyro Items	NSWCDIC Crane Code 4023
SW060-AA-MMA-010	Demolition Material	NSWCDIC Crane Code 4023
SW061-AA-MMA-010	Use of Explosives in Underwater Salvage	NSWCDIC Crane Code 4023
SW061-AB-ORD-010	Carts & CADs for Underwater Associated Equipment	NSWCDIC Indian Head Code 5320
SW073-AC-MMA-010	Miscellaneous Chemical Munitions	NSWCDIC Crane Code 4023

Figure 4-5-1. Technical Manual and Publication Listing.

MANUAL NUMBER	TITLE	TMMA (Command/Code)
SW300-BO-ORD-010 (U)	VT Fuzes for Gun-Fired Projectiles, Guidelines for Employment	NSWC DET White Oak Code G34
SW300-BO-ORD-020 (C)	VT Fuzes for Gun-Fired Projectiles, Descriptions and Design Criteria	NSWC DET White Oak Code G34
NAVSUP P-801/ TW010-AA-ORD-010	Stock List of Navy Ammunition	NAVAMMOLOGCEN Code 62
NAVSUP P-801/ TW010-AA-ORD-020	Stock List of Navy Ammunition (Data Supplement)	NAVAMMOLOGCEN Code 62
NAVSUP P-802	Navy Ammunition Logistics Codes	NAVAMMOLOGCEN Code 62
NAVSUP P-805/ TW010-AC-ORD-010	Inspection Requirements for RSS&I	NSWC DIV Crane Code 4061
NAVSUP P-806/ TW010-AC-ORD-020	Inspection Requirements for RSS&I (Ammunition Sentencing)	NSWC DIV Crane Code 4061
NAVSUP P-807/ TW010-AC-ORD-030	Inspection Requirements for RSS&I (Fleet Sentencing)	NSWC DIV Crane Code 4061
NAVSUP P-808/ TW010-AC-ORD-040	Inspection Requirements for RSS&I (Visual Aids)	NSWC DIV Crane Code 4061
NAVSUP P-801/ TW010-AA-ORD-010	Ammunition Unserviceable, Suspended, and Limited Use	NAVAMMOLOGCEN Code 62

Figure 4-5-1. Technical Manual and Publication Listing (Cont'd)

SECTION 5

Maintenance Management

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CHAPTER 5.1

Maintenance Functions

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CHAPTER 5.1

Maintenance Functions

5.1.1 Maintenance Functions

5.1.1.1 General. Maintenance, because of its impact on readiness, is one of the most important functions associated with the in-service portion of the ordnance life cycle. Maintenance operations are the most economical and rapid means of generating additional RFI ordnance to support operating forces. On-hand assets include unserviceable stocks (less C/C H and P), based on the presumption that given trained personnel, available components, and authorized facilities, unserviceable items can be made RFI within 30 days. Policies and procedures respond to the CNO RFIO and to Fleet operational requirements. The RFIO is the goal to be achieved and maintained. The assets available in the inventory to use toward achieving the RFIO is determined by the various Reclassification Operations.

5.1.1.2 Reclassification Operations. Reclassification of serviceable stocks to unserviceable and their migration from RFI to non-RFI stock, generating the need for maintenance, occurs as a result of the following programs and operations.

a. **Surveillance Program.** This program, in addition to providing a general assessment of the quality of the ordnance, will identify lots, strata, or types of end items requiring correction of defects or replacement of unsafe or unreliable components.

b. **Maintenance Certification Period (MCP) Evaluation.** Evaluations of ordnance which have exceeded their MCP are another source of repairables that emanate from serviceable stocks. MCP evaluation findings of unacceptable items/lots indicate that major maintenance is required. Items/lots within Acceptable Quality Levels (AQL), only require minor maintenance for recertification.

c. **Malfunction Investigations.** Investigations to determine causes of reported ordnance accidents, incidents, or malfunctions often detect unsafe, unreliable, or

defective components assembled in lots or lot strata. Maintenance is required to correct the defective lots.

d. **Segregation.** The segregation process separates and classifies ordnance of undetermined condition (C/C K). Repairable items, classified as C/C E and F by the segregation process, are candidates for minor and major maintenance respectively.

e. **Local Inspection.** Routine day-to-day operations such as issue, receipt, magazine restowage, or magazine surveillance, involve either a formal quality assurance inspection or a visual inspection by qualified ordnance personnel. During these operations "set asides" of unserviceable repairable items are generated.

f. **Modification.** In certain cases, it becomes necessary to convert either serviceable or unserviceable assets of an item in long supply (in excess of inventory objective levels) to an item configuration that is in short supply.

5.1.1.3 Perspective. The primary focus of maintenance management is to build, schedule, and execute a maintenance program to best achieve the RFIO for each ordnance item, within fiscal constraints applied by the Navy budget.

5.1.1.4 Organizational Relationships. Figure 5-1-1 identifies the organizations involved in the shore-based maintenance processes and their relationship to each other.

5.1.2 Maintenance Levels

5.1.2.1 Assignment Qualifications. The three-level maintenance concept places maintenance functions at the activity that is qualified to perform those maintenance functions, based on personnel qualifications, equipment, and facilitization. Assignments herein identify the lowest maintenance level at which a task may be performed. However, higher level maintenance activities may be assigned lower level functions. For example, preoperational, daily, and postoperational inspections of organizational level equipment used by an intermediate level activity. Allowance lists for

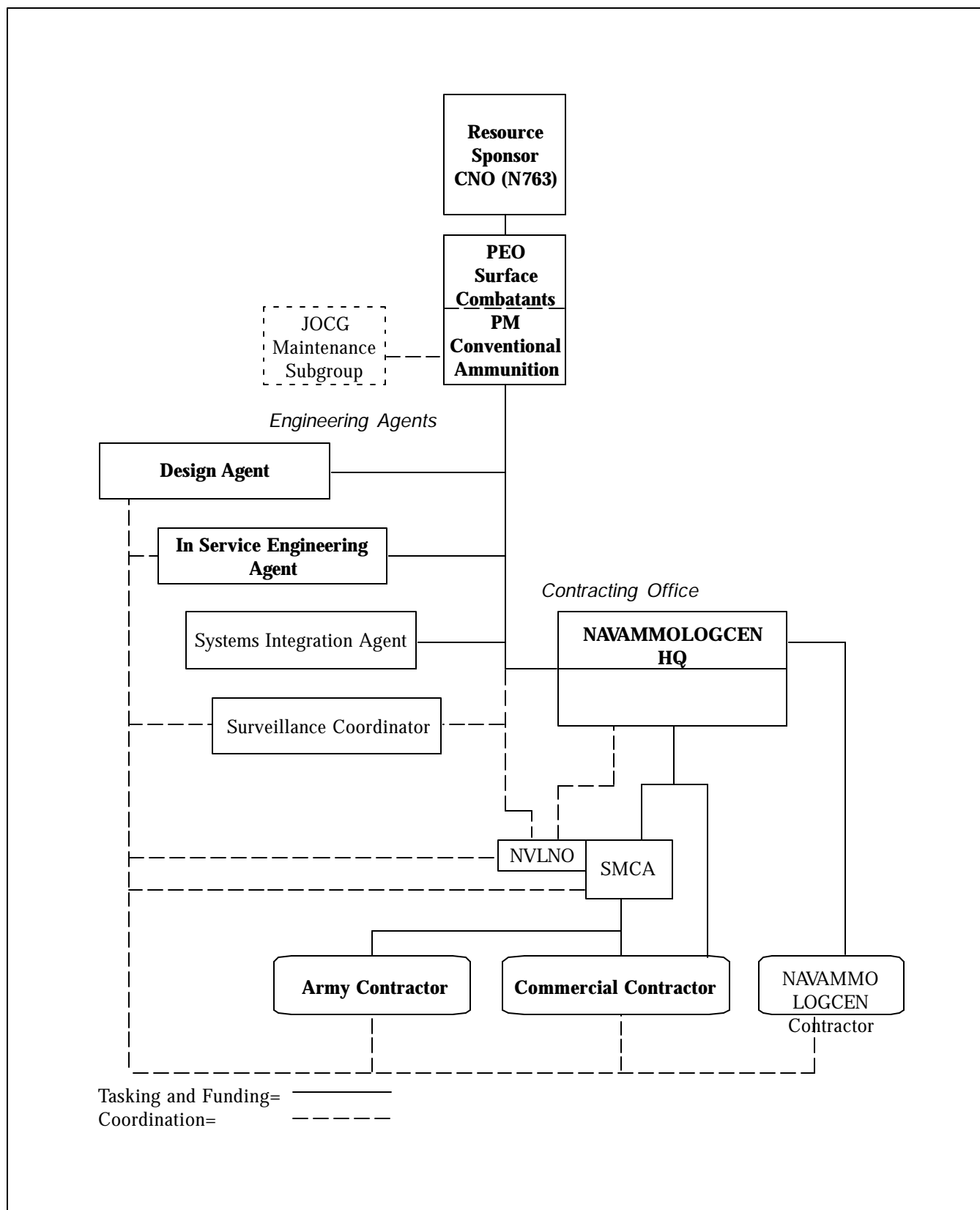


Figure 5-1-1. Maintenance Management Organizational Relationships.

support equipment, tools, and material identify the maintenance activity authorized to perform that level of maintenance on a specific ordnance item. Although a specific function may be assigned to ordnance intermediate level maintenance, it does not mean that all ordnance intermediate level maintenance activities are outfitted to perform this function. An activity must be assigned the level of maintenance for the specific ordnance item, have the required facilities and equipment, and have the required number of properly trained and certified personnel prior to performing any maintenance on the specific ordnance item.

5.1.2.2 Organizational Level Maintenance (OLM). OLM is defined as that maintenance which is the responsibility of and performed by a using organization on its assigned equipment. Its phases normally consist of inspecting, servicing, lubricating, adjusting, and the replacing of parts, minor assemblies, and subassemblies. OLM is performed as required by user activities in support of their own operational use, and by ordnance supporting/storage activities lacking maintenance facilities and equipment but having the required hand tools.

a. User Activities with Responsibility for OLM of Their Own Ordnance.

(1) All ships with service allowances of ship's own ordnance.

(2) Deployed EOD teams, Construction Battalions, etc. with custody of their own ordnance.

(3) Fleet Combat Training Centers located at Dam Neck and San Diego.

(4) All activities ashore, such as Outside Continental U. S. (OCONUS) reporting activities, minor Continental U. S. (CONUS) reporting activities, Naval Computer and Telecommunications Stations (NAVCOMMTELSTAs), and Naval Security Group Activities (NAVSECGRUACTs) storing any amount of ordnance for their own use in training or security operations.

b. Storing/Supporting Activities with Responsibility for OLM of the Ordnance They are Storing.

(1) Ships with cargo/mission load allowances.

(2) Shore activities providing limited support to tenant activities, nearby using activities, and transient activities; and North Atlantic Treaty Organization (NATO) infrastructure bases.

c. Maintenance at these activities is accomplished by qualified and certified personnel assigned ordnance responsibilities, and at NATO bases by indigenous personnel under U.S. Navy (USN) ordnance personnel supervision.

5.1.2.3 Intermediate Level Maintenance (ILM). ILM is defined as that maintenance which is the responsibility of and performed by designated maintenance activities for direct support of using organizations. Its phases normally consist of calibration, repair, or replacement of damaged or unserviceable parts, components, or assemblies; the emergency manufacture of nonavailable parts; and providing technical assistance to using organizations. ILM is performed ashore by ordnance storage and issuing activities in support of using organizations and ships. These retail storage activities have permanent maintenance facilities and Ammunition Peculiar Equipment (APE) with which to perform the assigned maintenance functions. ILM will only be performed on ammunition by those designated activities tasked with a funding document from the PM, unless a deviation request, forwarded via the chain of command, is approved by the CNO (N76). Maintenance at these activities is accomplished by qualified and certified personnel assigned ordnance responsibilities.

5.1.2.4 Depot Level Maintenance (DLM). DLM is defined as that maintenance performed on material requiring major overhaul or a complete rebuild of parts, assemblies, subassemblies, and end-items, including the manufacture of parts, modifications, testing, and reclamation as required. DLM serves to support lower categories of maintenance by providing technical assistance and performing maintenance beyond their responsibility. DLM is performed at activities with extensive facilities for complete repair and renovation of ordnance. These activities may be within the Navy, Marine Corps, Army, or a commercial contractor. DLM will only be performed on ammunition by those designated activities tasked with a funding document from the PM, unless a deviation request, forwarded via the chain of command, is approved by the CNO (N76). Maintenance at these activities is accomplished by qualified and certified personnel assigned ordnance responsibilities.

5.1.3 SMCA Maintenance. The SMCA has taken the same maintenance philosophy, but reduced maintenance actions down to two categories specified in DoD 5160.65-M.

a. Major. Includes renovation, conversion, modification, reclamation, refurbishment, and remanufacture of

serviceable or unserviceable assets on a reimbursable basis.

b. Minor. Includes cleaning, painting, repackaging, restenciling, and derusting performed by the storing agent on a nonreimbursable basis.

5.1.4 Specific Maintenance Functions. Specific maintenance functions for surface ammunition are identified by maintenance level in figure 5-1-2.

5.1.5 Responsibilities

5.1.5.1 CNO. The CNO and the CMC assign maintenance level responsibilities to activities of Navy and Marine Forces.

5.1.5.2 Resource Sponsor.

a. Provides resource management, policy, overall monitoring, and direction for the use of funds in ammunition maintenance.

b. Provides coordination with other resource sponsors in developing a consolidated maintenance budget submittal to best meet the needs of the Fleet.

c. Oversees the development, coordination, and justification of the requirements stated in the maintenance POM and budget submittals.

5.1.5.3 Program Manager

a. Provides program management, policy, overall monitoring, and direction for the maintenance of ammunition.

b. Develops, coordinates, and justifies the requirements stated in the maintenance POM and budget submittals.

c. Provides peacetime, surge, and mobilization maintenance requirements and priorities to the SMCA.

d. Assigns maintenance responsibilities for specific ordnance items/types to specific activities with the ap-

propriate maintenance level responsibility assigned by the CNO or CMC.

e. Allocates, as appropriate, O&MN funding and work request orders to accomplish in-service engineering functions incident to maintenance.

f. Provides a MIPR to NAVAMMOLOGCEN to forward to the SMCA for maintenance work to be performed by an SMCA activity.

g. Provides funding to NAVAMMOLOGCEN to place on a contract for maintenance work to be performed by a commercial contractor.

h. Provides funding to NAVAMMOLOGCEN for maintenance work to be performed by a NAVAMMOLOGCEN activity.

i. Reviews, and when appropriate, approves contractor-requested and/or-recommended waivers and deviations which are classified as major or critical.

j. Provides guidance to the ISEA concerning their responsibility for items undergoing maintenance.

k. Arbitrates and resolves engineering and technical disagreements between the ISEA and the cognizant DA.

l. Reviews critical or interfacing engineering change proposals affecting items undergoing maintenance.

5.1.5.4 Design Agent (DA). The DAs are assigned engineering and design responsibilities including development and maintenance of design documentation for modified ammunition items (including support equipment) under their respective cognizances. Specific responsibilities and assignments are outlined in section 4-1.

5.1.5.5 In-Service Engineering Agent (ISEA). The ISEA is assigned engineering responsibilities for maintenance of in-service assets. Specific responsibilities and assignments are outlined in section 4-1.

Organizational	Intermediate	Depot
GUN and LANDING PARTY AMMUNITION		
Breakout, visual inspection, and preparation for loading. Compliance with NARs. Compliance with Technical Directives (TDs). Upload and download from operational commitments.	Packaging and/or palletizing complete round or components. Cleaning and painting. Compliance with NARs. Compliance with TDs.	Packaging and/or palletizing complete round or components. Component replacement. Painting and corrosion control. Compliance with NARs. Compliance with TDs.
PYROTECHNICS and DEMOLITION MATERIALS		
Breakout, visual inspection, and preparation for loading. Compliance with NARs. Compliance with TDs. Upload and download from operational commitments.	Packaging and/or palletizing complete round or components. Compliance with NARs. Compliance with TDs.	Packaging and/or palletizing complete round or components. Compliance with NARs. Compliance with TDs.
SHOULDER-FIRED MISSILES/ROCKETS		
Breakout and visual inspection. Compliance with NARs. Compliance with TDs. Upload and download from operational commitments.	Packaging and/or palletizing complete round or components. Visual inspection of containers. Replacement or repair of minor components. Compliance with NARs. Compliance with TDs.	Packaging and/or palletizing complete round or components. Component replacement. Painting and corrosion control. Visual inspection and refurbishment of containers. Compliance with NARs. Compliance with TDs.
CADs/PADs		
Breakout and visual inspection. Install and replace. Compliance with NARs.	Breakout and visual inspection. Install and replace. Compliance with NARs.	Breakout and visual inspection. Install and replace. Compliance with NARs.

Figure 5-1-2. Specific Maintenance Functions.

5.1.5.6 NAVAMMOLOGCEN.

- a. Acts as contracting agent for ammunition maintenance conducted by SMCA and commercial contractors. Forwards MIPRs to the SMCA and contracts to the commercial contractors as directed by the PM.
- b. Collects, records, and maintains the supply, technical, and historical data essential to the maintenance process.
- c. Tracks and monitors maintenance being performed by the SMCA, NAVAMMOLOGCEN, and commercial contractors. Provides status to the PM and stocking points programmed to receive the material back into active inventory.
- d. Generates Military Standard Requisition and Issue Procedure (MILSTRIP) prepositioned material receipt cards to alert consignee activities of shipments due in from military and commercial contractor maintenance facilities.
- e. Provides periodic reports of overdue shipments.

5.1.5.7 Specific Ammunition Item/Type Maintenance Responsibilities. Before any ILM or DLM is scheduled, this manual should be reviewed to ensure that the maintenance activity is authorized to perform the required level of maintenance on the specific ammunition item. No maintenance

action on a surface ammunition item is to be performed without specific tasking from the PM. The following specific activities are authorized to perform ILM on surface ammunition as tasked by the PM.

- a. WPNSTA Yorktown - medium caliber projectiles.
- b. WPNSTA Seal Beach Det. Concord - medium caliber projectiles.
- c. WPNSTA Earle - medium caliber projectiles.
- d. WPNSTA Charleston - medium and major caliber projectiles.
- e. WPNSTA Seal beach - medium and major caliber projectiles.
- f. Naval Magazine Indian Island, Port Hadlock, WA - medium caliber projectiles.

5.1.5.8 The following specific activities are authorized to perform DLM, and major maintenance, on surface ammunition as tasked by the PM.

- a. Crane Army Ammunition Activity.
- b. McAlester Army Ammunition Plant.
- c. Hawthorne Army Ammunition Plant.

CHAPTER 5.2

Maintenance Process

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CHAPTER 5.2

Maintenance Process

5.2.1 Maintenance Planning.

5.2.1.1 General. CNO guidance. To maximize Fleet readiness, the CNO has issued OPNAVINST 4850.1B (NOTAL). This provides policies and procedures for the peacetime maintenance of unserviceable non-nuclear ordnance assets to meet the assigned RFIO.

a. Maintenance requirements for POM and budget submissions will be calculated to achieve or maintain the following levels:

(1) The Asset Readiness Objectives (AROs) specified in OPNAVINST 4850.1B (NOTAL) enclosure (1) for war reserve stocks.

(2) Enough RFI ordnance to meet peacetime training requirements and research and development test expenditures in each fiscal year.

b. Unfunded maintenance requirements carried forward from prior years will be phased in future years in a manner to ensure that the additional requirement can be absorbed by the maintenance facilities.

c. Ordnance whose RFI assets exceed war reserve objectives or which are not required by the scenarios prescribed for planning will not be programmed for maintenance. Plans for long term storage of these assets will be developed to ensure adequate surveillance and protection for potential future use. The PM assigns responsibility for preparation of the maintenance budget models, management of the input data files, and the resultant product reports in support of their maintenance program.

5.2.1.2 Maintenance Budget Modeling.

a. Primary Purposes of the Maintenance POM Budget Model and the Apportionment Model.

(1) Definitize budget dollars to achieve necessary ammunition item ARO through the FYDP.

(2) Provide detailed back-up data to support and justify budget projections.

(3) Provide a reactive mechanism to update requirements after budget review cycle decisions.

b. POM Budget Model. This model projects quantitative maintenance requirements and the dollars required for the POM submissions. The initial submission by the PM occurs approximately 24 months prior to the budget fiscal year. It is a development of total requirements to attain 100 percent asset readiness for a set number of items in each year of the FYDP. The model can also be executed to compute the budget requirements to achieve the CNO-directed ARO or to determine the maintenance objectives that match the FYDP fiscal controls.

c. Apportionment Model. The apportionment budget model process is run with updated asset data by location and condition, to provide a basis for implementation of the current year maintenance program with programmed funds. Retail and wholesale stocking activities' repairable assets, capabilities, and costs are considered in relation to asset readiness requirements, item priorities, and program balance to accomplish specific maintenance projects involving major and minor maintenance operations. The apportionment model is also run in the initial planning of the budget year with the following alternatives being produced.

(1) Total requirement to achieve 100 percent asset readiness.

(2) Budget to achieve CNO-directed readiness objectives.

(3) A series of incremental (predetermined) budget reductions with AR and MR assessments.

(4) Minimal budget to support NCEA and PWRMR.

d. Input Data and Sources for the Budget Models.

(1) Worldwide CAIMS asset data.

(2) Planned FYDP procurement, projected NCER consumption, and acquisition objectives for the FYDP from material planning studies.

(3) Projected receipts from the maintenance process on retail and wholesale stocks obtained from the Navy

Renovation Status Report (NAVSEA Form 4850/3), and the SMCA Integrated Conventional Ammunition Maintenance Plan (ICAMP).

(4) Projected receipts of repairable ordnance generated by Fleet-returned ordnance from projected ship offload schedules in the RSS&I model.

(5) Projected repairable ordnance due to ordnance degradation from QEA data files and from MCP test results.

(6) Average unit maintenance cost, from station stabilized rates, or DMWR workhour norms from the SMCA, or from contractor maintenance rates specified in the contract.

(7) Asset data by location and condition from ILM and DLM activities from CAIMS.

5.2.1.3 Integrated Conventional Ammunition Maintenance Plan (ICAMP). Annually, the SMCA compiles the ICAMP for SMCA-assigned ordnance items, based on the Services' requirements for maintenance as presented in Depot Maintenance Interservice Support Agreement (DMISA) exhibits and in current MIPRs, to accomplish the following.

a. Presents an integrated summary of the total wholesale maintenance effort as a vehicle for evaluation of the Services' maintenance programs.

b. Promotes interService communications and coordination.

c. Provides the impetus for effecting program changes to achieve balance and efficiency while meeting Services' operating requirements.

d. Provides a means of detecting shortfalls.

5.2.1.4 Budgeting. The PM prepares the budget submissions, based on maintenance requirements to meet readiness objectives developed by the Maintenance Budget Models, as constrained by prior PBDs. As the budget cycle proceeds from the POM to Congressional submission, major issues, revisions, and reclaims are supported by the back-up data developed by the models. The budget line for maintenance includes direct costs for specific quantities of ordnance items, and the narrative covers the readiness position improvement.

5.2.1.5 Funding. Workload plans for retail activities, SMCA facilities, and contractor facilities are completed

after Congressional approval of the DoD budget. Funds for the annual direct maintenance costs for retail activities are forwarded to NAVAMMOLOGCEN for allocation. The PM provides funds for the annual direct maintenance costs for SMCA activities to NAVAMMOLOGCEN, who submits MIPRs to the SMCA for allocation. Funds for the annual direct maintenance costs for contractor facilities are forwarded to the contractor by the PM in accordance with the terms of the maintenance contract. Additional funds are provided to NAVAMMOLOGCEN to cover Immediate Fleet Issue (IFI) maintenance costs based on nonRFI stocks on-hand and from projected Fleet returns. IFI funds cover unscheduled material that can be renovated from on-hand unsegregated stocks or from due-in Fleet return ordnance to meet scheduled or known ordnance issue requirements. The economics of this rapid turnaround, with no overland shipment from an inland source, overrides readiness objective requirement priorities which normally control maintenance schedules.

5.2.2 SMCA Performed Maintenance. The SMCA performs major maintenance and minor maintenance on wholesale non-nuclear ordnance items assigned to the SMCA.

5.2.2.1 Major Maintenance. Major maintenance performed by the SMCA on Navy wholesale stocks is on a cross-service basis (reimbursable) under the terms of a DMISA. Requirements and cost negotiations are submitted by the PM through NAVAMMOLOGCEN to the SMCA in the form of DMISA exhibits in accordance with the specified time phasing. A funding account is provided by a MIPR, and billing is submitted by the SMCA when work is completed.

5.2.2.2 Minor Maintenance. Minor maintenance performed by the SMCA on Navy wholesale stock is on a common-service basis (nonreimbursable). The SMCA plans and budgets for storage and warehousing of all material in his custody. Storage and Warehousing funds are used for storage and minor maintenance processes. These funds are allocated by the SMCA to storage activities based on projected workload. All wholesale ammunition requiring minor maintenance is categorized by the respective Navy ISEA according to the following priorities which are sent to the SMCA via NAVAMMOLOGCEN for development of integrated DoD priorities.

a. Priority 1. Required for immediate peacetime needs or for the first level of War Reserve Requirements. Automatic scheduling is authorized.

b. Priority 2. Required for peacetime needs during the first year or for a second level of War Reserve Require-

ments. Automatic scheduling is authorized after completion of Priority 1 items.

c. Priority 3. Required for peacetime use during the next two to five years or for a third level of War Reserve Requirements. These items may not be scheduled for maintenance without prior approval of the Navy ICP.

d. Priority 4. Retain as is, unless specific instructions are received from the Navy ICP.

5.2.3 Maintenance Documentation

5.2.3.1 Depot Maintenance Work Requirement (DMWR). The DMWR is developed by the ISEA in accordance with MIL-M-38784 to convey the mandatory technical information on ordnance maintenance and demilitarization operations to maintenance activities. The DMWRs show special safety, technical, and production inspection requirements; tooling and equipment to be used; methods; procedures; materials; and document references. The maintenance activities use the DMWR to prepare their Standard Operating Procedure (SOP) for the assigned maintenance operation.

5.2.3.2 Configuration Management (CM). CM must be maintained through all maintenance actions whether on a single ordnance item or a complete ammunition lot. The processes below must be maintained from their initiation during the acquisition process described in section 3-4.

a. Approval for Navy Use. If the maintenance procedure is taking an existing item in long supply and converting it to a new configuration, the new configuration must be approved by the Weapons Systems Explosives Safety Review Board (WSESRB) prior to the conversion.

b. Type Classification. If the maintenance procedure is changing any of the functional characteristics of the ordnance item, the type classification must be reviewed to see if any changes are required.

c. Hazard Classification. If the maintenance procedure is changing any of the explosive characteristics of the ordnance item, the hazard classification must be reviewed to see if any changes are required.

d. Lot Numbering/Control Numbers. All maintenance actions must be reviewed to determine if the actions require changes in lot numbering and/or control numbering, due to component replacement etc.

e. Waivers, Deviations, and ECPs. Waivers, deviations, and ECPs are handled in the same manner as during the production process to maintain a complete audit trail.

5.2.4 Maintenance Execution. The essential elements to begin execution of a maintenance assignment are funding from the PM, a DMWR from the ISEA, and the assets on which the maintenance is to be performed (including any required replacement components).

5.2.4.1 Scheduling. If the maintenance is to be performed by a NAVAMMOLOGCEN activity, NAVAMMOLOGCEN will select the site and schedule the maintenance as coordinated with the PM. If the maintenance is to be performed by an SMCA activity, the SMCA will select the site and schedule the maintenance as coordinated with the PM. If the assets are not located at the maintenance facility, the IM at NAVAMMOLOGCEN will be directed by the PM to transfer the assets to the maintenance facility in time for the scheduled maintenance.

5.2.4.2 Maintenance Status. The following reports are available to keep the PM and IM informed of the maintenance status and when the assets will be returned to the active RFI inventory.

a. Ammunition Maintenance Progress Reporting System (AMPRS). AMPRS is an automated version of the NAVSEA 4850/3A report. The report is submitted monthly to the ISEA at NSWC DIV Crane. It is used by all surface ammunition maintenance activities, including SMCA activities, to facilitate reporting maintenance progress on a timely basis. This data in turn is utilized to formulate progress reports for the PM. The AMPRS report contains the following data on all funded maintenance projects.

(1) DODIC, CAIMS Control Group Family, and any Local Control Numbers.

(2) Quantity.

(3) Condition Code.

(4) Unit Cost.

(5) Total Funded Cost.

(6) Monthly Planned Schedule

(7) Inducted Units.

(8) Accepted Units.

(9) Actual Unit Cost on Completed Items.

(10) Actual Workhours.

(11) Month Complete.

(12) Funds Balances/Overruns.

(13) Remarks, with detailed explanations of fall-out, overruns, waivers, changes in Scope of Work, or any other data crucial to the funded assets.

b. DRSMC Form 38s. As for production, the SMCA furnishes monthly delivery status reports on DRSMC Form 38s to the requiring Service, advising of the maintenance progress. See subparagraph 3-3.9.5. for information on Form 38s.

c. Procurement/Renovation/Production File. As IM, NAVAMMOLOGCEN maintains a central procurement, renovation, and production status file for ordnance items, in CAIMS. See subparagraph 3-3.9.3. for information on this file.

d. Prepositioned Material Receipt Cards. NAVAMMOLOGCEN's loading of delivery schedules into the CAIMS maintenance files enables the establishment of due-ins and the generation of PMRCs to prospective receiving field activities. See subparagraph 3-3.9.6. for information on PMRCs

e. DRSMC Form 45s. The IOC also utilizes DRSMC Form 45s within the DCS for SMCA. These forms show the actual production schedules at the IOC and commercial contractor facilities. See subparagraph 3-3.9.7. for information on this file.

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CHAPTER 6.1

Inventory Management System Overview

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CHAPTER 6.1

Inventory Management System Overview

6.1.1 Inventory Management System Overview.

6.1.1.1 General. This chapter addresses functional areas of inventory management. This includes the distribution and stocking of non-nuclear ordnance; requisitioning, returning, issuing, receiving, and storing of ordnance items; the reporting of physical assets; the logistics support interfaces between the U.S. Navy and the U.S. Marine Corps, U.S. Coast Guard, and the SMCA, respectively; and the management responsibilities for mobilization planning in support of contingencies.

6.1.1.2 Asset Allocation. The inventory management functions pertain to the management of a multi billion dollar inventory consisting of a wide range of end items and components. These items represent the aggregate material on hand, or due in, needed to satisfy the combat and non-combat ordnance stocking objectives, afloat and ashore. Total Fleet requirements are allocated in accordance with OPNAV allocation letters, and within budget constraints. Shortages to these allocation goals are satisfied mainly through new production or maintenance actions. Assets due in from production are consigned on a "fairshare" basis to satisfy claimant PWRMR/NCEA shortfalls. Ordnance is allocated and distributed to the afloat forces to fill allowances of combat and auxiliary ships. A distinctive feature of the ordnance material management system is the positioning of retail replenishment stocks at tidewater locations to facilitate over-the-dock accessibility for onloading and offloading of combatants and auxiliary ships.

6.1.1.3 Perspective. The primary focus of inventory management is to develop an asset distribution plan to best meet the needs of the Fleet and all other NCEA users, and to manage the available ordnance assets according to that plan within the fiscal constraints applied by the Navy budget. Maintaining the right ordnance, in the right material C/C, at the right stockpoint (with accurate visibility of the assets in the automated inventory systems) at each of these retail stock points becomes a primary management challenge.

6.1.1.4 Organizational Relationships. The organizations involved in inventory management are spread throughout

the Navy organizational structure. Figure 6-1-1 identifies the organizations involved in the acquisition processes and their relationship to each other. The following sections will describe the inventory management processes and identify the organizational responsibilities for those processes.

6.1.2 Ordnance Distribution and Stocking.

6.1.2.1 Inventory Stockage Concept. DoD policy states that support activities will provide maximum material logistics support for approved forces under an inventory stockage concept that minimizes supply response time. Stockage for each material category will be provided by achieving a balance between required supply performance and economy, consistent with peacetime operations and combat readiness considerations.

6.1.2.2 Supply Source Levels. To facilitate maximum inventory support for approved forces, the customer has three levels of supply source to draw from. The first level is from their own shipfill, mission load, or service ammunition allowance which has been tailored to their mission. This supply is carried with them to draw from, wherever they deploy. The second level of supply source is retail-resupply stocks from cargo loads aboard Combat Logistic Force (CLF) ships and some overseas secondary stocking points, or by cross-decking from other combatants. This supply is available to the customer through underway replenishment or overseas port visit. The third level of supply source is from the CONUS primary and secondary stocking points. This supply is available to the customer primarily pierside or at anchorage, and can be from either retail stocks, or wholesale stocks which have been transferred from inland wholesale storage to the retail stockpoint for transfer to the customer. These CONUS primary and secondary stocking points support the Fleet by filling the shipfills and mission loads for combatant ships initially and "topping them off" as required, at dockside or by lighterage. Auxiliary ships such as the AEs, AOE's, and AORs are outloaded by these same stocking points to provide the retail-resupply afloat replenishment to deployed combatant forces.

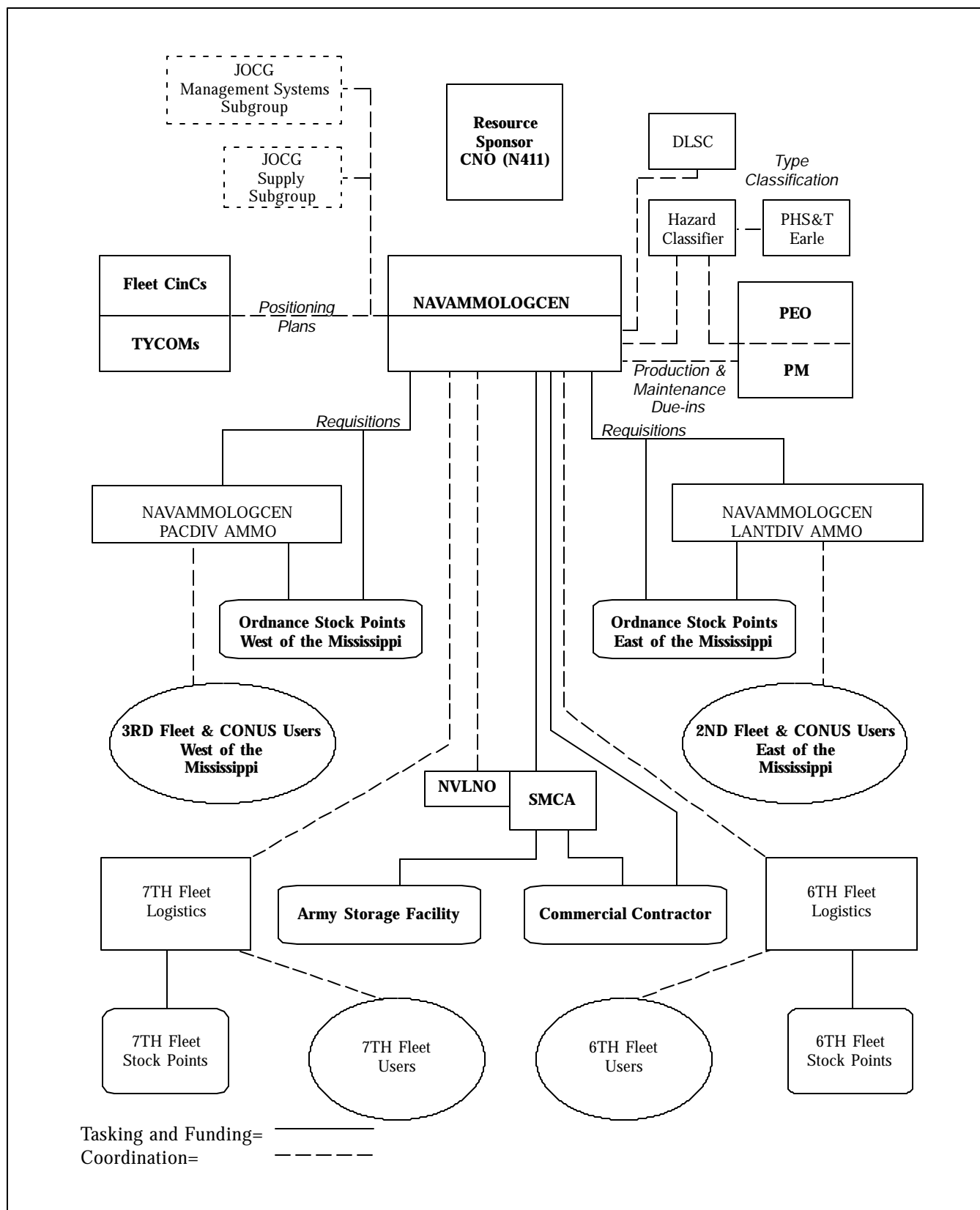


Figure 6-1-1. Inventory Management Organizational Relationships.

6.1.2.3 "Pull" Distribution. As a rule, the supply distribution system for non-nuclear ordnance operates as a "pull" system, in that material for stock in support of end-use requirements is drawn down from the supply source. By this system, ordnance items needed to support allowances and/or satisfy noncombat expenditures are requisitioned by the local weapons/ordnance officer.

a. The pull system depends on local initiative in determining future shortages to requirements and initiating material requests in a prescribed manner. The following are examples of requirements that are requisitioned ("pulled") from the supply source: stockpoint requirements for authorized load plans and allowance items, material to support ordnance evaluation and maintenance projects, and replacement of issues to ships and local activities from stock.

b. It is important to note that requisitions for stock do not necessarily trigger redistribution actions between stockpoints. In situations where stock relocation between the holding and requiring activities is uneconomical, requisitions for replenishment may be satisfied by assets due from procurement or maintenance, by statistically earmarking a portion of the assets for the requiring activity. This earmarking is accomplished by the IM working with the Acquisition or Maintenance Manager to modify the destination(s) listed on the procurement or maintenance contract.

6.1.2.4 "Push" Distribution. In contrast to pulling (requisitioning) requirements, items may be pushed (allocated) to activities to accommodate major changes or readjustments to the stock distribution patterns. The FLTCinCs provide direction for the positioning of shipfills, PWRMR, and NCEA stocks.

6.1.3 Automated Systems Support. To assist in the management of ordnance assets at retail stocking points and user activities, automated systems have been developed and installed throughout the Fleet and support activities. Until recently, these automated systems were designed for specific computer hardware and their information not easily transportable between systems. Efforts are being taken to transition to an "open platform" system which will allow the users to place it on any IBM compatible computer with a DOS/Windows operating system, or a computer with a UNIX operating system. This new system is called the Retail Ordnance Logistics Management System (ROLMS).

6.1.3.1 ROLMS is an ordnance inventory and management system designed for use by all Fleet/shore activities.

a. ROLMS is being designed and centrally managed by NSWCDIV Crane to provide a multi-level automation tool to be used by any retail ordnance stockpoint or user activity/unit. Due to the system being designed for an "open platform," the computer hardware is no longer centrally managed. The system is tailored to best support each individual command's needs by loading only the modules and sub-modules that will be used. This flexibility improves the support to the Fleet and reduces system maintenance cost. As an individual command's mission changes, the system can change with it by adding or deleting modules as required. ROLMS Core is intended to be operated on a PC, with the Intermediate and Full versions providing client/server networking capabilities.

b. ROLMS Automated Processes.

- (1) Requisitions.
- (2) Receipts.
- (3) Issues/Expenditures.
- (4) Renovation/Maintenance/Production.
- (5) Asset Maintenance.
- (6) Inventory.
- (7) Reorder/Excess.
- (8) Storage Utilization.
- (9) Notice of Ammunition Reclassification.
- (10) Reference/Catalog Data.
- (11) Data Download.
- (12) Data Upload.
- (13) Scanner/Label Actions.

c. Once ROLMS is fully developed, there will be three standard configurations from which users will be able to customize to best fit their activity needs.

(1) Core. Will replace the Standardized Conventional Ammunition Automated Inventory Record (SCAAIR) system. When operated without the Intermediate and Full add-on modules, it can operate in a DOS/Windows PC environment. ROLMS Core generates DAAS requisition messages and ATR messages.

(2) Intermediate. Will replace the Fleet Optical Scanning Ammunition Marking System (FOSAMS) in a

UNIX client/server environment. ROLMS Intermediate generates DAAS requisition messages and ATR messages.

(3) Full. Will replace the Ordnance Management System (OMS) in a UNIX client/server environment. ROLMS Full provides Transaction Item Reporting (TIR) communications with CAIMS through DAAS.

d. ROLMS is planned for a phased deployment schedule within Core, Intermediate, and Full functionality levels. After all the levels of packaged functionality become available, they will be selectable by any level of user to meet site specific processes and procedures, thus providing a seamless system. This seamless system improves connectivity between systems, and with CAIMS. This seamless system also greatly reduces training requirements for the Fleet by eliminating multiple training and by installing training software modules (automated tutorials) on the systems.

6.1.3.2 Ordnance Management System

a. OMS is the single system of record for management of all accountable ordnance and reportable transactions at major ordnance stockpoints. OMS is an on-line, real time, automated information system that uses source data automation. This includes optical scanning capabilities, remote data entry via video terminals and a diskette interface that allows data to be exchanged between other ordnance management information systems. OMS provides TIR communications with CAIMS through DAAS.

b. OMS was designed by NSWCDIV Crane to provide a tool to Naval Weapons Stations for ordnance management. It was developed around the organizational structure of a weapons station (individual office functions) to improve asset visibility and reduce paper being passed from office to office to keep track of the ordnance material. The computer software and hardware are centrally managed by NSWCDIV Crane. The multi-terminal networked system is on a Hewlett Packard computer in an MPE operating system environment.

c. OMS Automated Processes.

- (1) Receipts.
- (2) Notice of Ammunition Reclassifications.
- (3) Inventory Actions.
- (4) Excess Items.
- (5) Issues.

- (6) 1348-1 Documents.
- (7) Shipment Preparation Worksheets.
- (8) Restow Actions.
- (9) Scanner/Label Actions.
- (10) Asset Data Elements Maintenance.
- (11) Reporting.
- (12) Diskette/Paper Tape Operations.
- (13) File Maintenance.
- (14) Inquiries.
- (15) Production/Maintenance Actions.

6.1.3.3 Fleet Optical Scanning Ammunition Marking System.

a. FOSAMS is an ordnance inventory and management system designed for large Fleet and shore activities. It accounts for ordnance on hand, on a ship, or in stock, and generates DAAS requisition messages and ATRs.

b. FOSAMS was designed by NSWCDIV Crane to provide an ordnance management tool to Naval Air Stations and other secondary stockpoints, as well as large naval ships with mission/cargo allowances. The system runs on an NCR Tower computer in a UNIX operating environment. The computer software and hardware are centrally managed by NSWCDIV Crane. The system provides many of the same automated processes as OMS, but all functions are performed on the same dedicated computer within the ordnance office.

6.1.3.4 Standardized Conventional Ammunition Automated Inventory Record.

a. SCAAIR is an ordnance inventory and management system designed for small Fleet/shore activities. SCAAIR accounts for ordnance on hand, and generates DAAS requisition messages and ATRs.

b. SCAAIR was originally designed by COMNAVAIRSYSCOM, and transitioned to NSWCDIV Crane, to provide small Fleet and shore activities who would not receive FOSAMS, with an automated system for ordnance inventory and management. It runs on a PC in a DOS/Windows operating environment. The computer software is centrally managed by NSWCDIV Crane. SCAAIR uses

the Microsoft Foxbase+ Database Management System. Applications allow the user to perform the following tasks:

- (1) Requisitioning.
- (2) Transaction Reporting.
- (3) Inventory Reporting.
- (4) Utilities.

6.1.3.5 Total Ammunition Movement Management System (TAMMS).

a. TAMMS is used to manage a station-wide Net Explosive Weight (NEW) load plan. TAMMS' online database holds information for managing the processing and placement of explosive laden conveyances.

b. TAMMS was designed by Naval Weapons Station Seal Beach Det. Concord to provide a tool to Naval Weapons Stations for ordnance distribution management within the station. The computer software is centrally managed by Naval Weapons Station Seal Beach Det. Concord. TAMMS maintains an automated load plan that contains all valid conveyance locations and the NEW allowed at each location. Locations may be grouped into arcs or viewed separately. As railcars, trucks, barges, ships, or other conveyances are moved, TAMMS compares their laden NEW to the NEW allowed in a specified area. TAMMS generates immediate online warning messages to operators when NEW limits may be exceeded as the result of a proposed conveyance move. Warnings are also generated for a number of other conditions, including

over/under-loaded conveyances and material incompatibility. TAMMS also records the Fire Hazard, Security Classification, and Transportation codes for all material stored in conveyances. This will ensure that conveyances will be spotted in appropriate security areas, and provide fire fighters with valuable hazard information.

6.1.3.6 Defense Automatic Addressing System. This system acts as the central distribution control point for message traffic. The system receives message traffic from all sources and directs it to the appropriate destination(s), by message or electronically through dedicated phone lines. DAAS directs ATRs to the appropriate destination(s) without any processing actions. DAAS processes the other ordnance transactions received (i.e., requisitions) and then directs them to their appropriate destination(s).

6.1.3.7 Army Systems. The Army has two systems to support wholesale ordnance management.

a. Commodity Command Standard System (CCSS). This is the headquarters level management system similar to CAIMS. The system resides at the IOC, Rock Island, IL., and communicates electronically with CAIMS through DAAS on SMCA assigned ordnance located at SMCA activities.

b. Standard Depot System (SDS). This is the management system similar to OMS. The system is used by SMCA ordnance activities and communicates directly with CAIMS through DAAS on Navy ordnance items not assigned to the SMCA, and through the CCSS on Navy ordnance items assigned to the SMCA, which are located at that activity.

CHAPTER 6.2

Allowance Lists

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CHAPTER 6.2

Allowance Lists

6.2.1 Allowance Lists.

6.2.1.1 General. U.S. Navy combatant ships are constructed to accomplish specific missions which include certain capabilities such as antisubmarine warfare, antiair warfare, and surface-to-surface warfare. Based on the armament and weapons systems selected by the Ships Characteristics Improvement Panel to accomplish the required mission, and CNO guidance for minimum rounds per weapon or per ship and type ratios (projectile/powder mix), a Combat System Equipment List (CSEL) is prepared by COMNAVSEASYS-SCOM. The CSEL is a specification of the space and weight requirements for the armament equipment and the quantities of weapons for which space is to be provided during construction. A provisional allowance list is prepared by NAVAMMOLOGCEN directly from the CSEL and distributed for validation. This is done 60 days prior to the end of construction for surface ships and 60 days prior to the completion of the fitting out period for submarines.

6.2.1.2 Purpose. The allowance lists represent a portion of the Fleet combat requirements based on various threat scenarios developed by the JCS. The prime purpose is to specify the individual command's portion of the combat ordnance requirement to meet the assigned threat. The requirements determination process, described in volume III chapter 2-3, builds on this, along with other factors. The secondary purpose, used along with the annual NCEA, is to provide the IM with a control tool to authorize or deny requisitions received from the Fleet.

6.2.2 Types of Allowances

6.2.2.1 COMNAVSEASYS-SCOM Allowance Lists (30,000 Series). An individual allowance list is prepared for each ship in the active and reserve Fleets, for certain Fleet groups, detachments, units and shore activities, and for Advance Phase Functional Component (APFC) initial outfitting. As changes and adjustments to service allowances occur, revised COMNAVSEASYS-SCOM Allowance Lists are suffixed to indicate revisions (e.g., the first revision to COMNAVSEASYS-SCOM List 31,000 is 31,000A). Separate allowance lists called cargo load or mission load allowances are issued for ships that carry ordnance in support of other Fleet units. Cargo and mission allowance quantities are determined by FLTCINCs or their Type Commanders (TY-

COMs). The various allowance lists are described as follows.

a. Shipfill Allowance Lists. COMNAVSEASYS-SCOM Lists 30,000 through 33,999 series. A listing of ordnance required to support:

- (1) Ship's own installed armament.
- (2) Ship's authorized small arms weapons.
- (3) Ship's distress and signaling pyrotechnic requirements.

Shipfill allowance lists contain full wartime allowances of service ordnance designed to fill the ship's magazines to capacity, without regard to ordnance item availability in stock.

b. Provisional Allowance Lists. COMNAVSEASYS-SCOM Lists 30,000 through 33,999 series. A provisional allowance list is a preliminary listing of an initial shipfill allowance of service ordnance prepared and forwarded to the ship and the TYCOM by NAVAMMOLOGCEN for validation of compatibility with armament systems and stowage capability. Provisional allowance lists are replaced by shipfill allowance lists after validation or within six months.

c. Cargo Load Allowance Lists. COMNAVSEASYS-SCOM Lists 34,000 through 34,999 series. A listing of ordnance (all cogs) carried as cargo for underway replenishment (UNREP) issue to support other Fleet units. Cargo load allowances are for MLSF ships, i.e., AEs, AOs, AOE's, and AORs, and are issued as a separate and additional list to the MLSF ship's own shipfill allowances.

d. Mission Load Allowance Lists. COMNAVSEASYS-SCOM Lists 34,000 through 34,999 series. A listing of ordnance to be carried in support of specific forces (e.g., by CVNs for aircraft squadrons based aboard, and by ADs and ASs for ships and submarines assigned). Mission load allowances are issued for CVs, ADs, ASs, LHAs, and LPHs as separate and additional lists to their shipfill allowance lists.

e. Service Ordnance Allowance Lists for Fleet Groups, Detachments, Teams, and Miscellaneous Activities. COMNAVSEASYS-SCOM Lists 35,000 through 39,599

series. A listing of service ordnance required to support the assigned missions of deployed or deployable Fleet elements and for miscellaneous shore activities. Typical Fleet elements and activities with service allowance lists are:

- (1) Explosive Ordnance Disposal Groups (EOD-GRUs).
- (2) Explosive Ordnance Disposal Detachments (EODDETs).
- (3) Mobile Construction Battalions.
- (4) Beach Master Units (BMUs).
- (5) Naval Security Group Activities.
- (6) Naval Communications Stations.

In some cases, such as for Amphibious and Mobile Construction Battalions (ACBs and MCBs), sufficient ordnance for a number of days support is included in the allowance to provide for deployment to remote areas with no nearby source of replenishment. Fleet elements deployed to forward or remote areas will retain custody and provide storage for the ordnance in their service allowance. Fleet elements on deployment to theaters with nearby Navy ordnance storage activities should store their ordnance at these activities as reserved stocks. Service allowance ordnance for deployable elements in CONUS may be pre-positioned at nearby Navy ordnance storage activities for outloading on deployment, or pre-positioned at activities in the theater assigned.

f. Allowance Lists for Advanced Base Functional Components. COMNAVSEASYS COM 38,000 through 39,599 series. ABFCs are composed of specified quantities of ordnance, equipment, supplies, spare parts, and cadres of personnel that are planned as initial outfits for deployment on mobilization. Advanced Base Initial Outfitting Lists (ABIOLs) are tailored to provide requirements for specialized supporting groups, units, battalions, or teams such as a Mobile Construction Battalion, Cargo Handling Battalion (CHB), and Explosive Ordnance Disposal Detachment. Required equipment, supplies, and ordnance quantities are generally not packaged and set aside in storage as separate stock, unless requirements are included in Fleet operational plans. When ABFCs are provisioned, appropriate storing activities earmark stocks or establish reservations in activity central records. Naval Reserve personnel with specialized backgrounds are assigned mobilization billets in organized Reserve units to meet ABFC requirements. Ordnance, since it requires special stowage, security, and handling procedures, is identified in ABIOLs by reference to an allowance

list number. Ordnance to support ABFC allowances required by Fleet OPLANs is included in Fleet PWRMR levels for positioning by assignment to appropriate station Load Plans.

6.2.2.2 Fleet Commanders' Allowances.

a. Interim Allowances. Shipfill allowances are predicated on ship's magazine capacities. FLTCinCs or their TYCOMs are authorized by OPNAVINST 8010.12F (NOTAL) to develop alternate allowance lists which affect an appropriate distribution of the available assets to all afloat units. Such lists are identified as interim allowances and are used by afloat units as a basis for requisitioning ordnance and as a baseline for measuring and reporting ships' current ordnance readiness to FLTCinCs or their TYCOMs. Interim allowances are issued by FLTCinCs or their TYCOMs with a copy to NAVAMMOLOGCEN for inclusion in CAIMS reports as appropriate.

b. Tailored Allowances Lists. The CNO, recognizing that the FLTCinCs must have the capability and flexibility to adjust afloat units' allowances to meet mission or specific task requirements, has authorized the approval and issuance of tailored allowances. These are intended primarily for a particular deployment, or for specific missions or tasks, and are temporary departures from shipfill or interim allowances. Their life span is not to exceed the normal six month deployment of units.

6.2.3 Allowance Responsibilities

6.2.3.1 Chief of Naval Operations

a. Establishes the capabilities for accomplishment of the basic operational missions for all ships in the active and reserve Fleets, operational fleet groups, units, detachments, teams and shore activities.

b. As system improvements evolve, approves the upgrade of existing ships' capabilities.

c. Provides quantitative and type ratio (projectile/powder mix) guidance for ordnance to be included in shipfill and activity service allowances.

6.2.3.2 Fleet Commanders in Chief

a. Annually, the CNO allocates combat ordnance requirements to the major claimants (i.e., CINCPACFLT and CINCLANTFLT). Based on CNO approved combat requirements and available retail stocks controlled by the claimant, FLTCinCs or their TYCOMs distribute their assets to meet these allocated requirements objectives. Dis-

tribution is made to meet shipfill allowances, cargo load and mission load allowances, or to retail sites ashore to meet Fleet requirements. When available assets are less than allocated requirements, the priority of requirements to be filled is determined by the FLTCinCs or their TYCOMs. Under conditions of constrained asset availability, FLTCinCs are responsible for the modification of shipfill, cargo, and mission allowances by the establishment of interim allowances.

b. Similarly, when adjustments are required to meet ordnance requirements for assigned missions or specific tasks, the FLTCinCs or their TYCOMs modify the shipfill, cargo, and mission allowances and issue them as tailored allowances.

c. Recommended changes to shipfill allowances, originated by ships, Fleet groups, detachments, teams, etc., are reviewed by FLTCinCs for justification and applicability to other like units or ships of the same class. Requests for changes are either forwarded recommending approval to NAVAMMOLOGCEN for a permanent allowance change, or are returned disapproved.

6.2.3.3 Naval Ordnance Center

a. Acts as the focal point and approval authority for all COMNAVSEASYSCOM 30,000 Series allowances.

b. Reviews all proposals for changes to existing COMNAVSEASYSCOM ship and activity service allowances, and the establishment of new allowances for compliance with existing guidance, compatibility with installed armament, and identification accuracy.

c. Coordinates the review of items by the IMs and PMs.

d. Approves, based upon review recommendations, Fleet-originated additions, deletions, or quantitative item changes to existing shipfill and activity service allowances.

e. After approval, forwards the data for NAVAMMOLOGCEN to prepare and issue 30,000 series COMNAVSEASYSCOM lists.

6.2.3.4 NAVAMMOLOGCEN. NAVAMMOLOGCEN has been assigned the responsibility for the preparation, publication, and maintenance of COMNAVSEASYSCOM 30,000 series allowance lists. Policy and guidance in the overall preparation and distribution of COMNAVSEASYSCOM Lists are retained by NAVAMMOLOGCEN

HQ. Specific NAVAMMOLOGCEN Mechanicsburg PA responsibilities include the following.

a. Prepare and publish the following allowance lists and revisions.

(1) Provisional allowance lists for each new construction ship are distributed 60 days prior to the end of construction for surface ships, and 60 days prior to completion of fitting out for submarines.

(2) Shipfill allowance lists are distributed upon validation of the provisional lists or, within 6 months in the absence of Fleet comments. Shipfill allowance revisions are distributed when approved by NAVAMMOLOGCEN.

(3) Cargo load and mission load allowance lists are distributed upon receipt of initial load lists or revisions from NAVAMMOLOGCEN as COMNAVSEASYSCOM 34,000 - 34,999 series lists.

(4) Service ordnance allowances and revisions for Fleet groups, detachments, teams, and miscellaneous shore activities are distributed when approved by NAVAMMOLOGCEN.

(5) ABFC allowances and revisions are distributed as directed by NAVAMMOLOGCEN.

b. Maintain COMNAVSEASYSCOM allowance lists.

(1) Update to replace items by new, preferred, or modernized items.

(2) Update to correct item nomenclature, DOD-IC/NALC, and cognizance symbol.

(3) Update to effect unilateral item changes authorized by NAVAMMOLOGCEN.

(4) Issue NAVAMMOLOGCEN-initiated corrective maintenance changes on Form NAVAMMOLOGCEN 4441/121 (pen-and-ink change) and summarize changes in a quarterly change bulletin. When routine changes exceed 10 percent of the list's total items or when necessary for clarity, issue revised lists.

(5) Prepare and issue an annual COMNAVSEASYSCOM Allowance List Index.

6.2.3.5 PEOs/PMs. Ordnance PEOs/PMs will validate the portion of the allowance list covering their ordnance, when received from NAVAMMOLOGCEN for review.

6.2.3.6 Fleet Units and Shore Activities

a. Fleet ships validate their provisional allowance lists and advise NAVAMMOLOGCEN of any discrepancies between allowance items and installed armament, and any deficiency in capability to properly stow allowance quantities in ship's magazines.

b. Ships, units, and activities with 30,000 series allowances submit proposed changes, complete with justification and rationale, through their chain of command to NAVAMMOLOGCEN.

c. Activities update their allowance lists by pen-and-ink changes received from NAVAMMOLOGCEN, pending distribution of the next revision.

6.2.4 Applicability of Allowance Lists

6.2.4.1 General

a. Shipfill Allowances. Shipfill allowances provide the ship with a supply of preferred ordnance in support of the ship's mission. Allowances should contain maximum quantities consistent with ship's magazine capacity, to ensure maximum sustainability without replenishment.

b. Service ordnance authorized for expenditure to meet NCEA should be used from the onboard service ordnance allowance. It should be replenished in accordance with appropriate FLTCinC, or their TYCOM, directives, thus rotating stocks.

c. Ordnance designed for training only, such as VT-Nonfragmenting projectiles or Target Practice (TP) projectiles, are excluded from service ordnance allowances. Exceptions to this are certain dummy projectiles and charges for cycling mounts that are part of a ship's permanent equipment, and TP rounds for firing through muzzle covers. Training ordnance for NCEA should be loaded aboard in addition to, or in place of, service ordnance prior to an exercise or demonstration, and replaced with service ordnance in accordance with appropriate FLTCinC, or their TYCOM, directives.

d. Service Ordnance Allowances for Fleet Groups, Detachments, Teams, etc. Service allowances for these Fleet elements are generally predicated on a mission scenario basis, in terms of rounds per day.

e. Service Ordnance Allowances for Activities Ashore and for ABIOLs. These allowances are based on amounts required to perform the task (i.e., sufficient de-

structors/destroyers for the equipment and documents to be destroyed, or ordnance per weapon to be used by civilian or military guard force).

f. Cargo Load and Mission Load Allowances. These are developed by FLTCinCs, or their TYCOMs, initially on commissioning of the ship and are promulgated by NAVAMMOLOGCEN as COMNAVSEASYSKOM 34,000 series lists. COMNAVSEASYSKOM cargo and mission load allowances are standard loads used for planning purposes (i.e., for prepositioning standard loads and for mobilization planning). Changes required by FLTCinCs to COMNAVSEASYSKOM cargo and mission allowances for mobilization planning purposes are made by formal request to NAVAMMOLOGCEN for a COMNAVSEASYSKOM List change.

g. Shipfill, Cargo, and Mission Load Interim Allowances. Based on CNO allocation of combat ordnance and the annual noncombat ordnance allocation, FLTCinCs may adjust allowances by issuing modifications as interim allowances. Interim allowances are issued by FLTCinCs and reflected in CAIMS. Interim allowances are for long-term (1 to 3 years) adjustment of loads in accordance with fleet distribution plans for Fleet-controlled stocks.

h. Shipfill, Cargo, and Mission Load Tailored Allowances. Tailored allowances are short-term adjustments of loads for specific tasks or missions. Upon completion of the task or mission, ships revert back to their interim allowances or 30,000 series allowances. Tailored allowances are issued by FLTCinCs, or their TYCOMs, not to exceed the normal 6 month deployment of units.

6.2.4.2 Requirements Determination for Acquisition

a. Shipfill allowance lists contain the full range of level-of-effort service ammunition and threat-oriented service weapons for ships' installed armament and assigned weapons in amounts to fill the ships' magazines to capacity without regard to ordnance availability. These allowance quantities may be considered as each ship's long-term notional combatant shipfill to be met when requirement and fiscal constraints are lifted on items reduced by Fleet interim allowance quantities. Shipfill allowance quantities are used in the determination of requirements for the PWRMR for all ordnance items not covered in the NNOR and the SECDEF Defense Planning Guidance. Primarily, these are pyrotechnic, demolition, and small arms and landing party ammunition items.

b. Service ordnance allowances for groups, detachments, teams, and activities are used for determining

PWRMR requirements to the extent that these deployable activities are included in OPLANs.

6.2.4.3 Requisitioning Guide and Readiness Baseline

a. All shipfill allowance lists that have not been modified by a tailored or interim allowance issued by FLTCinCs, or their TYCOMs, may be used as requisitioning guides for obtaining an initial outfit on-load upon completion of restricted availability or an allowance replenishment.

b. In the absence of a tailored or interim allowance, the shipfill allowance list is the baseline reference point for comparison of onboard inventory to determine the current readiness state. For mobilization planning purposes, shipfill, cargo, and mission load 30,000 series allowance lists are used to determine readiness state. Any shortfall to

these allowance quantities is termed a "Top-Off" requirement.

c. Cargo and mission load allowances are also used as requisitioning guides. Cargo and mission loads may have as many as three allowances - tailored, interim, or COMNAVSEASYSCOM 30,000 series. Requisitioning should be based on the tailored allowance or, in the absence thereof, on the interim allowance and, when directed by FLTCinCs, or their TYCOMs, on the COMNAVSEASYSCOM 30,000 series allowance list. Fleet and TYCOMs' interim and tailored allowances may contain NCEA ordnance.

d. Determination and reporting of the state of readiness is to be accomplished using tailored, interim, or COMNAVSEASYSCOM 30,000 series allowance lists, in that order, or as directed by FLTCinCs. Upon mobilization, the COMNAVSEASYSCOM lists will be used to determine top-off requirements for level-of-effort items.

CHAPTER 6.3

Cataloging and Item Identification Systems

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CHAPTER 6.3

Cataloging and Item Identification Systems

6.3.1 Federal Cataloging System (FCS).

6.3.1.1 General. The FCS is a commodity classification system designed to identify, describe, classify, and record all items entering the federal supply system. The FCS is mandated by Title 10, United States Code, Chapter 145. DoDD 4140.1 of 4 January 1993 (NOTAL) sets forth the policies and responsibilities for implementing the FCS, and outlines its objectives.

a. Provide a uniform system of item identification that describes, classifies, and numbers each item in the FCS that it is identified by a single NSN.

b. Enhance the operational readiness of DoD organizational components by improving methods of item identification, by improving processing efficiency, and by providing accurate and timely publication of catalog data.

c. Provide the means for monitoring the range and numbers of items entering the supply system in order to prevent their proliferation and ensure that management systems can operate with the minimum number of items essential to support.

d. Assemble and maintain integrated cataloging records which include the characteristics and selected technical and material management data for each item of supply.

e. Record and maintain item interchangeability and substitutability information.

f. Promote accessibility and interchange of FCS data in DoD and with other federal departments and agencies and participating NATO and non-NATO Countries.

g. Ensure the optimal level of cataloging systems computability and integration with the mission needs and data requirements of the various DoD organizational components and other FCS participants.

h. DoDD 4140.1 of 4 January 1993 assigns the responsibility for the management and administration of the FCS to the Director, DLA. These responsibilities include the development, review, approval, and uniform implementation of the FCS operating principles, rules, and procedures; the establishment of an automated information system; and the development and publication of documentation required to operate the FCS. The Defense Logistics

Support Center (DLSC) in Battle Creek, Michigan, is the central repository for the cataloging records pertaining to all items of supply stocked in the DoD supply system. DoDD 4140.1 of 4 January 1993 (NOTAL) provides additional direction concerning the mutual responsibilities of DoD and the General Services Administration in relation to the FCS function and the national supply system concept.

i. All processes, services, and publications relating to the cataloging functions of item management are subject to the policy direction contained in DoDD 4140.1 of 4 January 1993 (NOTAL). The logistic functions addressed by the FCS include item identification, design standardization, item entry control, supply, maintenance, material planning, provisioning, procurement, preservation, and packaging, transportation, warehousing, and disposal. Thus, the FCS provides the basis for a universal language of supply by establishing standard rules for identifying and describing all items of supply.

j. To accomplish the objectives outlined in subparagraph a, the various supply commodities are organized into groups, with classes within each group. Each two-digit numerical Federal Supply Group (FSG) identifies, by title, the broad commodity area of the individual classes comprising the group. Each class represents a family of items of supply that are relatively similar in their physical or performance characteristics or which are combined for supply management purposes. The maximum degree items shall be assigned to a particular Federal Supply Class (FSC) on the basis of what the item is and not on the basis of the application or intended use of the item." The DLA cataloging handbook H2-1 Federal Supply Classification lists the classes comprising FSG 13.

k. For general reference, items within a common grouping or class are collectively referred to by the items' group and class. A significant application of the four-digit FSC code is its use in structuring the NSN. The 13-digit NSN identifies a specific line item of supply, and is configured in the following manner:

(1) Federal Supply Classification. A four-digit code comprising the item's federal supply group and class (e.g. 1305, 1310, 1315, 1320 etc.).

(2) NATO Code. A two-digit number code which identifies the NATO country assigning the stock number and/or which indicates that the item is produced by

a country other than the country assigning the stock number. For ordnance this code is almost uniformly "00" or "01" which indicates U.S. production and cataloging cognizance.

(3) National Item Identification Number (NIIN). A nine-digit nonsignificant number that uniquely identifies an item of supply. The NIIN includes the NATO code and is the primary sequencing element of the NSN. Many catalogs, documents, and listings are in NIIN sequence.

1. NSNs are assigned to all items of supply which are centrally managed or procured for supply system stock. New items entering the supply system are generally processed in time to permit assignment of NSNs by DLSC prior to their shipment from producers or suppliers. In circumstances where NSN assignment is delayed and it is necessary to assign a temporary or expedient means of identification, a Navy Item Control Number (NICN) may be assigned by NAVAMMOLOGCEN. Frequently NICNs are assigned to items for which contractor delivery must be expedited prior to completion of the stock numbering process. They are also assigned to items undergoing development or evaluation or to items awaiting disposal or other action under conditions where the NSN cannot be determined. NICNs are temporary, pending NSN assignment, and therefore are not included in the DLSC files. However, those that are assigned by NAVAMMOLOGCEN are included in CAIMS and reflected in the Navy Stock List TW010-AA-ORD-010. Examples of the NICN as listed in section 2 of the stock list are as follows:

<u>CODE*</u>	<u>NIIN</u>	<u>FSC</u>	<u>COG</u>
LL	AM2-0051	1305	2T
LL	AM2-0062	1376	2T
LL	AM2-0103	1305	0T
LL	AM6-0055	8105	2T

* Code LL indicates that the number is locally assigned.

6.3.1.2 Cataloging Responsibilities

a. COMNAVSUPSYSCOM is responsible for performing the headquarters cataloging staff functions defined in DoDD 4140.1 of 4 January 1993 (NOTAL) and for providing staff support to the Assistant Secretary of the Navy Installations and Environment on cataloging matters common to the Navy and Marine Corps. This assignment includes developing, implementing, maintaining, and administering the Navy Supply System's cataloging policy. COMNAVSUPSYSCOM provides the program direction for automating cataloging systems and procedures. It is the Navy's primary representative in coordinating the Navy support of DLA in developing the standard operating

policies, regulations, procedures, and schedules required to implement, operate, and maintain the FCS. As necessary, COMNAVSUPSYSCOM recommends to DLA new or revised management techniques and procedures to improve Navy interface with FCS policies.

b. PEO/DRPM.

(1) Applies the established cataloging policies to the management of non-nuclear ordnance under their cognizance and generates the cataloging data required by the PM's checklist.

(2) Initiates, coordinates, and monitors the stock numbering of newly introduced ordnance items as directed by NAVSUP P-724 (NOTAL).

c. NSWCDIV Indian Head is the Navy's Hazard Classifier for ordnance, as directed by NAVSUP P-724 (NOTAL).

(1) Assigns the hazard classification, UN number, proper shipping name, and storage net explosive weight (NEW) based on the data submitted by the PEO/PM. The data required is specified in the hazard classification section of the PM's checklist.

(2) Forwards the above information to the other Services and the DDESB for concurrence and forwarding to MTMC, then on to the Department Of Transportation (DOT) for approval and assignment of an EX number. See section 7-1 for additional information.

(3) Enters the hazard classification, UN number, proper shipping name, storage NEW, and EX number into CAIMS.

d. PHS&T, NWS Earle is the Navy's agent for ordnance packaging, handling, storage, and transportation.

(1) Validates accuracy of storage and shipping catalog data.

(2) Enters the appropriate data on new ordnance items into their Explosives Safety Technical Manual System (ESTMS) for the next update of the SW020-ACSAF-010/020/030.

(3) Updates the NEW, storage, and shipping data as directed by the Hazard Classifier.

e. NAVAMMOLOGCEN is the designated ordnance cataloging agent for the Navy and Marine Corps in obtaining the assignment of NSNs and DoDICs from DLSC.

(1) Obtains NSNs from DLSC for non- nuclear ordnance items.

(2) Assigns NICNs to non-stock-numbered items.

(3) Records the Navy as the Primary Inventory Control Activity (PICA). This includes SMCA items not yet transferred or transitioned to the SMCA.

(4) Maintains a Master Ammunition File (MAF) in CAIMS which contains the catalog descriptive data applicable to ordnance stock-numbered items.

(5) Maintains the Navy's master DoDIC/NALC file.

(6) Publishes and distributes change notices and change bulletins advising field activities and Army activities of cataloging changes to Navy-owned items.

(7) Disseminates Change Notice Cards (CNCs) to field activities for incorporating safety and transportation data contained in SW020-AC-SAF-010 into the local records.

(8) Publishes and distributes the following cataloging documents:

(a) TW010-AA-ORD-010. Stock List of Navy Ammunition.

(b) TW010-AA-ORD-020. Stock List of Navy Ammunition Data Supplement.

(c) TW010-AA-ORD-030. Navy Ammunition Logistics Codes.

(9) Performs research, as requested, on unidentified items and advises field activities of their status and disposition.

(10) Registers or withdraws the Navy in the DLSC catalog files as a user of ordnance items.

f. The Defense Logistics Support Center, is the designated central repository for the cataloging records pertaining to all items of supply stocked in the DoD supply system.

(1) Assigns an appropriate stock number to the ordnance item submitted by NAVAMMOLOGCEN.

(2) Enters the catalog data, along with the assigned stock number, into their Federal Logistics Information System (FLIS), which is the automated repository for all DoD supply items.

(3) Publishes and distributes the FEDLOG.

(4) Notifies the Services of the new item and its accompanying catalog data.

g. Activities, ashore and afloat, that stock ordnance are responsible for incorporating all cataloging changes to the CAIMS files, into their local stock records. These changes are provided in change notice cards and change notice bulletins issued by NAVAMMOLOGCEN. They include SW020-AC-SAF-010 unique changes for ordnance pamphlet data, transportation data, unit of issue update, packaging data, and supply information updates as reflected in specific change notice codes.

6.3.1.3 NAVAMMOLOGCEN Form 8010/57. This form is prepared by the PEO/PM for each new ordnance item entering the Navy inventory as described in NAVSUP P-724. Applicable drawings and other documentation are submitted as enclosures to the form. Each data element indicated on NAVAMMOLOGCEN Form 8010/57, is mandatory since completeness and accuracy in identifying an item are critical at the time of initial cataloging, when such information is more likely to be readily available. Activities with on-hand inventories are dependent on up-to-date CAIMS cataloging data for supply, packaging, and transportation information relative to newly introduced items under their management. The end result of thorough and accurate initial item entry data is the assurance of a valid database for user reference. Upon completion of processing the NAVAMMOLOGCEN 8010/57 Request Form, it is returned to the originator by NAVAMMOLOGCEN IMSD, with the assigned NSN or NICN.

6.3.1.4 Item Development and Transition. Newly introduced ordnance items usually undergo an RDT&E phase leading to AFP. SMCA items that are developed and introduced by the Navy are managed by the Navy, pending transfer to the SMCA. This transfer is in accordance with formal transitioning agreements and RDT&E interface policies and procedures stated in chapter 2 of DoD 5160.65-M. During the item's development, Navy liaison is maintained with the Armament/Munitions Requirements and Development (AMRAD) Committee which is responsible for providing standardization guidance, ensuring that newly introduced ordnance items meet the common needs of the Services and provide interoperability with items used by NATO. Committee interest generally begins when a Service establishes ordnance requirements and the item enters advanced development. At this

stage it is the developing Service's (Navy) responsibility to obtain an NSN from DLSC, and take action to record the Navy as PICA. (If the item is to be transitioned to the SMCA, the SMCA will initiate action to record itself as the PICA and the "Introducing Service" (Navy) as the SICA when the item is transferred to the SMCA). When a stock numbered item is transitioned to the SMCA, NAVAMMOLOGCEN provides the IOC with the supply and technical cataloging data required by DoD 5160.65-M.

6.3.1.5 Unidentified Ordnance Items. Field activities occasionally receive (usually as rollback or user turn-in) or discover items with obsolete NSNs, or items for which neither NSNs nor NICNs are ascertainable. To ensure accountability, such items are temporarily identified and recorded in the local ordnance management system records. Prompt action is taken to obtain identification and disposition directions from the central IM. Stock numbers assigned at the local level are strictly temporary, are not incorporated into the CAIMS, and do not enter into the cataloging system. When unidentified material is received or discovered locally, action is taken by the activity to execute and submit SPCC Form 8010/57 to NAVAMMOLOGCEN in accordance with NAVSUP P-724 (NOTAL). Unidentified material with an estimated line item transaction value of less than \$100.00 may be appropriately disposed of locally without NAVAMMOLOGCEN involvement. Otherwise, pending identification and disposition instructions from NAVAMMOLOGCEN IMSD, the unidentified item(s) is assigned an interim stock number constructed in the following format.

a. Items identified to a deleted NSN:

(1) The first 2 digits - 99.

(2) The next 11 digits - the deleted stock number excluding the NATO code.

Example:

<u>Deleted Number</u>	<u>Assigned Local Number</u>
-----------------------	------------------------------

1305-00-687-1237

9913-05-687-1237

b. Items which are identified by drawing, part, or sketch number only.

(1) The first 2 digits -99.

(2) The next 11 digits - indicate the drawing, part, or sketch number preceded by zeros.

Example:

<u>Drawing, Part, Sketch Number</u>	<u>Assigned Local Stock Number</u>
178598	9900-00-017-8598
2784956811	9902-78-495-6811
17124567781	9917-12-456-7781

c. Items which cannot be identified by the above or other means.

(1) The first 4 digits - 9999.

(2) The next 2 digits - LL.

(3) The next 7 digits - assigned in sequence using a serial number beginning with 000-0001.

Example: 9999-LL-000-0001
9999-LL-000-0002

d. In each of the above, it is essential that 13 digits (alphanumeric), grouped and hyphenated as shown (with no blanks), are included.

e. Upon return from NAVAMMOLOGCEN of the annotated form SPCC 8010/57, the following actions are taken, as appropriate.

(1) Disposal authority provided. Process in accordance with the directions contained in the Disposal Release Order (DRO).

(2) Valid NSN provided.

(a) Delete the assets shown under the local stock number by processing a reversal transaction using the same Document Identifier Code (DIC) and document number used for the original receipt transaction.

(b) Using the same DIC and document number, process a receipt transaction gaining the assets under the NSN provided by NAVAMMOLOGCEN.

6.3.1.6 The Stock List of Navy Ammunition. The Stock List of Navy Ammunition, TW010-AA-ORD-010 provides the U.S. Navy and Marine Corps activities afloat and ashore with a complete listing of ordnance, components, and related equipment. The stock list is published and maintained by NAVAMMOLOGCEN as directed by COMNAVSEASYS COM (for surface ordnance) or by COMNAVAIRSYSCOM (for air ordnance). All requests for changes to the list or to its distribution are directed to NAVAMMOLOGCEN. The Stock List of Navy Ammunition consists of five sections.

a. Section One. This section is arranged in DoDIC/NALC sequence and excludes items to which DoDICs or NALCs are not assigned. The data contained in Section 1 is displayed with the following column headings.

(1) DoDIC/NALC. Self-explanatory.

(2) COG. The two-digit cognizance symbol which indicates the broad category of the ammunition item (2T, 8T, or OT), and the ICPs or IMs, as appropriate, having technical and inventory control.

(3) MCC. The Material Control Code is a one-character alpha code used as follows:

<u>Code</u>	<u>Definition</u>
B	An item requiring lot number reporting
C	An item requiring serial number reporting
E	An item requiring both lot number and serial number reporting, but which is reported by serial number only
K	An item requiring periodic lot reporting.

(4) FSC and NIIN. The FSC and NIIN together constitute the NSN of the item.

(5) Index Number. A semisignificant, six-character, alphanumeric number assigned to an item. The first character represents its Navy ordnance class, the remaining five digits are arbitrary. (Examples of class indicators are A - bombs and bomb components; B - military pyrotechnics; L - Marine Corps ordnance; R - gun ammunition over

4 inch.; T - surface launched guided missiles and components) The index number is used to sequence items within their respective classes, as in Section 3 of the stock list.

(6) Item Name and Description. Nomenclature of the item, noun name, modifiers, MK and Mod, series/type, etc.

(7) Reference Number. The drawing, standard, specification, or part number used to identify the item.

(8) UI. The item's unit of issue.

(9) Price. The item's unit price in terms of its unit of issue.

(10) Weight. The prorated weight of the item in pounds (i.e., the bare item weight plus its packaging or share thereof). Note: This weight information is not to be used for ballistic computations.

(11) Cube. The volume of the item in cubic feet.

(12) MOE Rule (Management Organization Entity Rule). A four-digit cataloging code which reflects the PICA/SICA relationship and responsibilities for data collaboration between managers and users. For example, A901 indicates U.S. Army as the PICA, N2T4 would indicate that NAVAMMOLOGCEN is the PICA.

(13) SEC. A one-digit code which indicates the item's security classification (U, C, S or T). For sensitive items that are classified and weigh less than 100 pounds, this code is numeric and is defined to combine the security and sensitivity classification of the items. Unclassified pilferable items are coded P.

(14) DEM. Demilitarization code assigned to an item in accordance with DoD 4160.21-M-1. This is a single character alpha code assigned to an item identifying it as a Munitions List Item (MLI) or a non-MLI and defining the degree of demilitarization necessary prior to final disposition.

(15) IRC. Issue Restriction Code, a two-digit alpha or alphanumeric code indicating restrictions applicable to item issue or instructions for item requisitioning, turn-in, or exchange. A complete listing is contained in NAVSUP Pub 437.

(16) SOS. Source Of Supply of the item as indicated by the activity's three-digit routing identifier code (e.g., code NCB indicates NAVAMMOLOGCEN as IM for ordnance).

(17) SLC - Shelf-Life Code, a one-character code denoting the period of time (beginning with date of manufacture) that the item is expected to remain suitable for issue and use. At the expiration of this time, the item should be referred for test or disposition instructions.

Examples:

<u>Code</u>	<u>Shelf-Life Period</u>
A	1 month
B	2 months
S	60 months
0	Nondeteriorative
5	18 months

An alpha code denotes items for which shelf-life cannot be extended. A numeric code denotes items for which shelf-life can be extended. A complete listing of shelf-life codes is contained in NAVSUP Pub 437.

(18) SLAC. Shelf-Life Action Code, an alpha or alphanumeric assigned to a shelf-life item to specify the type of inspection, test, or restorative action to be taken when the item has reached its storage shelf-life limit.

Examples:

<u>Code</u>	<u>Description</u>
00	Nondeteriorative
C1	Incorporate all mandatory changes
L0	To be tested by the laboratory or activity in increments after the initial time limit has expired.

The complete listing of SLACs is contained in NAVSUP Pub 437.

b. Section Two. This section is arranged in NIIN sequence and contains data identical to that described for section one. However, this section includes all items, irrespective of DoDIC/NALC assignment. In addition to centrally cataloged items, section two lists items to which NICNs have been assigned by NAVAMMOLOGCEN.

c. Section Three. This section arranges items in Navy class groups by index number sequence to facilitate reference. Data coverage is identical to that in sections one and two.

d. Section Four (Data supplement). This section provides detailed characteristics of the items cataloged in section two except for items under index codes F_____ and Y_____ (smokeless powder and ordnance production com-

ponents, respectively). Items are listed in NIIN sequence. The information consists of data derived from technical publications, specifications, and drawings. Also included are configuration data, cube and packing density, and applicable palletized unit codes. Section four has a separate and limited distribution and is available from NAVAMMOLOGCEN on request citing justification of need.

e. Section Five. Section five provides information on each item's NEW, in DoDIC/NALC sequence. Five different environmental situations are portrayed to provide ordnance handling personnel with the NEWs for storage, waterfront, production, shipboard, and transportation under varying conditions.

6.3.2 DoD Identification Code System.

6.3.2.1 General. In ordnance, certain end items and major assemblies fall into generic groupings, in terms of their close physical and functional relationships and interchangeability. For management convenience, these groupings are assigned DoDICs or NALCs, which may embrace one or more NSNs. For example, a 5-inch 38-caliber projectile has the assigned DoDIC D249 which includes distinct NSNs, differing solely in the color of their explosive bursts. Similarly, a 16-inch 50-caliber projectile may have several stock numbers dependent on the dye color upon impact; however, these stock numbers are grouped under the single DoDIC D862.

6.3.2.2 Identification Numbers. The following numbering systems group and identify ordnance end items and major assemblies.

a. DoDIC. Centrally-assigned identification code consisting of four alphanumeric characters which denotes interchangeability and comparability between like items of ordnance.

b. DoDAC. Department of Defense Ammunition Code which includes the FSC in addition to the assigned DoDIC. The DoDAC is an eight-character number divided into two parts by a hyphen. The first part consists of the item's FSC (e.g., 1305), and the second part consists of the DoDIC (e.g., A011).

c. NALC. NAVAMMOLOGCEN assigned four-digit code consisting of two alphas and two numerics, or four numerics. The second digit of an alphanumeric NALC is either a "W" (e.g., AW02) for Navy items, or an "X" (e.g., AX02) for Marine Corps items. The NALC is similar to a DoDIC, except for its assignment by NAVAMMOLOGCEN vice DLSC.

6.3.2.3 Control Numbers. It is frequently convenient to organize related DoDICs/NALCs categorically to summa-

size, process, or display functionally similar items. For management purposes, four-digit control numbers are devised to isolate and identify end items by category, end-item configuration, functional commonality, etc. A simplified example of grouping by control number is presented.

<u>Control Numbers</u>	<u>Applicable DoDICs/NALCs</u>
ZPL1	D226, D228, D232, D233
ZPM1	D226, D232
ZPN1	D228, D233

In the example, control number ZPL1 groups all DoDICs which apply to 5"/38 VT projectiles. Control numbers ZPM1 and ZPN1 provide further differentiation by dividing the DoDICs into distinct groups as to "self-destructing" and "non-self-destructing". A control number includes one or more end-item DoDICs or NALCs within such groupings to achieve the homogeneity and degree of commonality desired. In effect, grouping by control number represents a tailored packaging to achieve general performance and mission support capabilities. Control numbers are assigned by NAVAMMOLOGCEN and incorporated into CAIMS for retrieval in preparing tailored asset and other reports. They undergo changes as new DoDICs or NALCs are assigned, old ones dropped, or as combinations may be directed by CNO or the PM. Stratification and budget preparation depend on control number grouping for proper pre-

sentation. Control numbers are also used to consolidate and present assets of related items, display readiness posture and capabilities, fairshare items from production, systematically arrange and display new procurements, and schedule assets for maintenance. The Control Number Index is updated monthly and is maintained in CAIMS by NAVAMMOLOGCEN.

6.3.2.4 NAVSUP P-802. This technical manual provides the operating forces and certain SMCA activities with a reference to the DoDIC and NALC codes applicable to ordnance and components used by the Navy and Marine Corps. This is a 3-part reference.

- a. Part 1. Ordnance items are arranged in alphabetical sequence by nomenclature/description within each of the ordnance classes.
- b. Part 2. Ordnance items are arranged in ascending alphanumeric DoDIC or NALC sequence.
- c. Part 3. Ordnance items deleted or superseded since the last revision are listed.

Comments concerning additions, deletions, errors, or omissions of data contained in NAVSUP P-802 or requests for changes to its distribution list are forwarded to NAVAMMOLOGCEN.

CHAPTER 6.4

Receipt, Segregation, Storage, and Issue (RSS&I)

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CHAPTER 6.4

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CHAPTER 6.4

Receipt, Segregation, Storage, and Issue (RSS&I)

6.4.1 Ordnance Stock Point Load Plan.

6.4.1.1 General. The activity load plan is a valuable tool for shore retail stockpoints (primary and secondary) to use in determining appropriate stockage levels to properly support their customers. All NAVAMMOLOGCEN ordnance storage activities, NSWCDIV Crane, and NSWCDIV Indian Head are required to develop an annual Load Plan in accordance with NAVSUP P-724. Changes are being made to replace the Approved Basic Stock Level of Ammunition (ABSLA) at all shore retail stockpoints with a Load Plan. FLTCinCs and other ordnance activity customers are encouraged to keep their location and quantity positioning requirement submissions current, in order to facilitate timely and accurate preparation of ordnance activity load plans. Once the annual activity load plans have been submitted and approved, each ordnance activity will maintain their stocking levels in support of the Fleet and other authorized customers.

6.4.1.2 Load Plan Factors. The FLTCinCs and other ordnance stockpoint customer requirements are termed Load Plan Factors. There are 17 Load Plan factors presently in use. Not all Load Plan factors apply to every ordnance stockpoint. The Load Plan factors are as follows:

- a. Fleet Positioning Plans.
- b. Shipfill/Mission/Cargo.
- c. Non-Combat Expenditure Allocation.
- d. Coast Guard.
- e. CONUS PWRMR.
- f. Marine Corps V(W).
- g. Intermediate Level Maintenance.
- h. Depot Level Maintenance.
- i. Production/Manufacturing.
- j. CADs/PADs.
- k. Mobile Submarine Simulator (MOSS).
- l. Mobile Mine Assembly Group (MOMAG).

- m. Other Services.
- n. Contractor/Other Agencies.
- o. Local Community.
- p. Foreign Military Sales/Security Assistance Program.
- q. Demil/Disposal.

Enclosure (1) to NAVSUP P-724 identifies the agency responsible for each factor and the basis for computing the maximum storage quantity for each ordnance item.

6.4.1.3 Load Plan Development.

a. Ordnance activity load plans will be developed, reviewed, and published annually. Development will begin 6 months prior to the load plan year, with projected completion and publication prior to the beginning of the new load plan year. The individual station-tailored load plans will be consolidated into a single document, the NAVAMMOLOGCEN Master Ammunition Load Plan.

b. The development process is started by NAVAMMOLOGCEN issuing the current year's factor a-f values to ordnance activities/IMs.

c. Each ordnance activity then develops a recommended load plan based on the current factor values, and submits it to NAVAMMOLOGCEN for approval.

d. Review by the appropriate PMs and IMs of the submitted load plans is coordinated by NSWCDIV Crane to determine appropriate high/low levels for each DoDIC/NALC family at each storage location.

e. Upon determination of the appropriate high/low quantities, NAVAMMOLOGCEN approves the individual and consolidated master ammunition load plans and issues them to the applicable ordnance activities.

6.4.1.4 Load Plan Use. The activity's load plan is used separately, or in conjunction with other applicable documents or records, as the activity's official reference document concerning the range and depth of ordnance that is authorized to be stocked at that activity.

a. It is a tool enabling in-depth quantitative analysis (in terms of tonnage, cube, and square feet) of an activity's

capability and capacity for storing ordnance material. Storage capabilities may be further quantified or broken out into specific categories.

- (1) Shipfill, mission, and cargo loads.
 - (2) Prepositioned War Reserve Material Requirements.
 - (3) USMC class V(W) (ground ordnance).
 - (4) Explosive, inert, and sensitive items.
 - (5) Security risk items.
- b. This information can also be used to identify and justify the need for additional magazines, in connection with military construction planning.
 - c. The load plan is useful to the activity in identifying and requisitioning items for which stockage is authorized. At the NAVAMMOLOGCEN, the activity's load plan is incorporated into CAIMS, and requisitions received by NAVAMMOLOGCEN are monitored by UIC to determine authorization status and/or the need for further justification.
 - d. When used with other information (i.e., usage, stock status, Fleet and IM directives, etc.), the load plan may signal the existence of local excess. Suspect items discovered in this manner are reported to the IM for verification of continued need or for disposition instructions.
 - e. The load plan reflects a listing, by DoDIC/NALC, of authorized ordnance components. When used with SW012-AA-MMA-010/020 and the CAIMS Complete Round Dictionary (CRD), IMs may compile end-use configuration rounds and all-up rounds.

6.4.2 RSS&I Management Policies and Procedures. The following are management policies and procedures that have application in more than one RSS&I process.

6.4.2.1 Ordnance Handling. A major function that occurs in each of the RSS&I processes is physical handling of the ordnance. Safe handling procedures are specified in the appropriate NAVSEA OPs. Proper use of Industrial Materials Handling Equipment is covered in NAVSEA SW023-AH-WHM-010.

6.4.2.2 Material Condition Codes and Defect Codes. Ordnance C/Cs shall be as defined in NAVSUP P-724 (NOTAL). Ordnance Defect Codes (D/Cs) shall be applied per the specific directions contained in the NAVSUP PUBS 805/806. Proper use of C/Cs and D/Cs is important in

assisting the IMs and Technical Managers in proper stockpile management and minimizing acquisition, maintenance, and disposal costs. All ordnance in the inventory will have an assigned C/C. For all ordnance except C/C A, D/Cs shall be present/entered on the tag/label.

6.4.2.3 First-In/First-Out (FIFO). The FIFO philosophy must be applied to receipt, storage, and issue processes to minimize the generation of ordnance overage/requiring maintenance. Also, if not properly applied during receipt and storage, applying this philosophy during issue would require excessive ordnance handling.

- a. Good supply management dictates that older items be issued in lieu of newer ones. This practice is necessary to purge the inventory of older, but usable ordnance items. Retention of older stocks in the supply system generates greater handling, maintenance, and QE costs.

- b. As a function of automated source selection screening, CAIMS has been programmed to satisfy requisitions based on certain priority designators assigned to items in its files. (Priority one items are older than priority two, etc.) As the supply system is purged of the older RFI inventory, a higher percentage of newer RFI stocks will result.

- c. In some rare cases, older stock cannot be used as a substitute for a newer item. In such cases the customer codes the requisition with MILSTRIP advice Code 2B "Do Not Substitute." Inappropriate use of the 2B advice code will not be tolerated.

6.4.2.4 Stock Rotation. Retail activity stock levels are prescribed by load plans, which provide the total approved stock level and a breakdown of the specific requirements such as ordnance for shipfills, mission and cargo loads, PWRMR, and NCER ordnance. The specific requirements that comprise the total stock level are the maximum levels authorized for the specific purpose, and are not stock reservations. Items listed under PWRMR or NCER may be issued to replenish shipfill, cargo, mission load, and PWRMR ordnance may be issued to meet NCEA requirements, provided replenishment action is taken. The total approved stock level is considered as available in the selection of ordnance for issue, and its issue is desirable for stock rotation.

6.4.2.5 Outloading. Cargo outloading at retail activities consists of throughput ordnance received For-Further-Transfer (FFT). It usually originates at wholesale activities for cargo load/mission load, initial allowance fills, or for point-to-point shipment by commercial shipping on mobilization. Throughput cargo is not taken up in station stock upon receipt. FFT material cards are prepared in accor-

dance with chapter VII of NAVSUP P-724 and forwarded to NAVAMMOLOGCEN via AUTODIN.

6.4.3 Receipt

6.4.3.1 Material Identification. Material identification upon receipt, is entered into automated inventory management systems to assist the ordnance activity in managing the ordnance. For those activities with either the OMS, FOSAMS, or ROLMS, receipt personnel enter the appropriate data off of the GBL. The data is then processed by the system and made available to all other activity personnel to properly process the receipted material. For those activities with TAMMS, receipt personnel enter the data from the GBL. The system determines the effect of the receipted material on the activity load plan and NEW limits for siting purposes.

6.4.3.2 Receipt Inspection. Received ordnance shipments must be inspected to verify that the condition is as specified on the form DD 1348. Quality Assurance Department or Quality Verification Division personnel of primary stockpoints and qualified ordnance personnel of secondary stockpoints shall inspect and confirm serviceability, and report discrepancies or damages that have occurred in shipment. TDRs or SDRs will be submitted as described in section 4-5.

6.4.4 Segregation Program

6.4.4.1 General. Receipt inspection separates ordnance that requires no additional inspection or processing from that which does. Ordnance is sentenced to C/C J or K when the true identification and/or condition of the ordnance is not known and requires further processing, to determine the true identification and/or condition. For ordnance that cannot be adequately sentenced (in terms of actual material condition and identification) by receipt inspection (and other, similar processes), segregation provides a level of sentencing capability that precludes the need to have such sentencing performed as a part of traditional maintenance processes, which are more costly in both time and money.

Segregation is an important process in providing an accurate picture of the stockpile condition for the IM and Acquisition/Maintenance PM. The smaller the percentage of the total stockpile in C/C J or K, the better job the IM can do distributing the RFI stock, and the more accurately the PM can manage the acquisition and maintenance programs.

6.4.4.2 Screening. Ordnance may be sentenced to C/C J, indicating the need for screening (e.g., 100 percent inspection) to remove individual, defective items from a population of items.

6.4.4.3 Segregation. Fleet-returned ordnance in C/C K (undetermined condition) should be expeditiously segregated to permit its take up in stock under its true condition classification. A period of 30 days is the limiting guideline for material in C/C K. Activity segregation and exterior maintenance schedules should be in accordance with a priority list issued by NAVAMMOLOGCEN. The ordnance segregation process is specified in NAVSUP PUB 806.

a. Material in C/C K is identified to its correct DoD-IC/NALC, NSN, and lot number, and physically separated if necessary. C/Cs and quantities listed on the receiving document will be verified and any quantity discrepancies reconciled. All items will be checked for reclassifications listed in NAVSUP PUB 801 and subsequent NARs.

b. C/Cs listed in NAVSUP PUB 801 do not necessarily override a locally imposed C/C, but shall do so if the local code is less restrictive. For example, a service-wide reclassification, by NAR, of a lot to C/C F due to a defective explosive component requiring replacement by major maintenance, will override locally held rounds that may be classified C/C E since the minor maintenance will not restore these items to a serviceable condition. Conversely, if local inspection indicates an item with a NAR reclassification to C/C F has sustained such damage that it is no longer repairable by component replacement, it should be locally reclassified to C/C H. Any items found in C/Cs H or P by a NAR or NAVSUP P-805 check should be set aside for appropriate disposal action.

6.4.4.4 Inspection. Remaining items in all other C/Cs are inspected as follows.

a. Ordnance packed in hermetically sealed or waterproof containers shall not be opened unless inspection of the container indicates it has been previously opened (broken seal), or that it is damaged or has deteriorated to an extent that the ordnance contents may be affected.

b. Ordnance items normally not packed in containers but protected by ordnance details, such as waterproof protective caps and unpalletized, shall be inspected for proper and complete identification markings and for exterior damage or deterioration.

c. Unit pallet loads of packaged or unpackaged ordnance will not be depalletized unless the seals have been broken. The contents of each pallet load shall be inspected for damage, broken seals, or deterioration without depalletizing.

d. Inspections described above can often be conducted on-pier during off-loading, if time and resources permit. On-pier sentencing, particularly of sealed containers and palletized ordnance, should be maximized to avoid build-up of C/C K and to reduce turn around time for ordnance issues.

e. Segregation inspection must be performed in the sequence specified in the applicable governing publication and Standard Operating Procedure (SOP). The segregation inspection shall also be limited to the characteristics and inspection steps specified in the applicable governing publication and SOP.

6.4.4.5 Classification. Upon receipt, all ordnance whose lots are free of NAR suspensions, and whose C/C classification indicated on the form DD 1348-1 is verified by 100 percent inspection, shall be taken up in stock by reclassification from C/C K to the correct C/C. For Fleet-returned ordnance with no C/Cs indicated, the presumption during segregation is that all ordnance items are serviceable (C/C A). More restrictive C/Cs are then assigned to lots that have been reclassified by NARs, and to individual ordnance items as the inspection findings warrant. Segregation and reclassification of material held in C/C K should be expedited, overriding the NAVAMMOLOGCEN priority list for the current or upcoming FY Maintenance Program. Items with known future demand requirements should be included for rapid turnaround with IFI funds. As a general guideline, a 30-day maximum limit is desired for material in C/C K. On the 10th of each month, primary CONUS stockpoints are required to report amounts of unsegregated ordnance that has been onboard over 30 days.

6.4.4.6 Certification Requirement. Activities whose quality assurance programs are governed in total or in part by NAVSEA TO300-AM-ORD-010 or NAVSUP PUBs 801/802/803/804/805/806/807/808, shall certify the material condition and status (C/C) of all segregated ordnance. Certification shall be executed using an inspection indicator (stamp) or authorized signature on the Material Condition tag/label. Certification is required for all ordnance (serviceable, suspended, and unserviceable).

6.4.4.7 SMCA Segregation and Reclassification. When C/C K ordnance accumulates to an unacceptable level, a request for transfer of Fleet-returned ordnance to inland storage should be addressed to NAVAMMOLOGCEN. NAVAMMOLOGCEN will coordinate the shipment with the SMCA Ammunition Support and Maintenance Division at the IOC for designation of a wholesale stock destination. SMCA quality assurance personnel will check for outstanding restrictions or suspensions and will inspect to verify material conditions. Reclassification actions are accomplished by the preparation of an Ammunition Condition Report (ACR).

6.4.5 Storage.

6.4.5.1 Storage Ashore.

a. Ordnance storage activities are required to provide safe and secure storage for non-nuclear ordnance and inert components in a manner that will permit the most efficient and responsive support to the Fleet.

b. Management of available storage on a station-wide basis requires a broad knowledge of:

(1) Types and quantities of magazines, their sizes, and group locations.

(2) NEW limits and physical (volumetric) capacities of magazines in terms of items stored.

(3) Item storage compatibilities, item NEWs, and item sensitivity/security categories.

(4) General Fleet demand rate of items.

c. General Considerations that Affect Storage Management.

(1) The most efficient utilization of a magazine is to fill it to volumetric capacity, while attaining the maximum authorized NEW. Since this is seldom possible, individual magazine utilization can be optimized by judicious selection of low-ratio NEW to total weight items, consistent with permissible compatibility with high ratio items to maximize magazine storage volumetric and NEW limits.

(2) Magazine selection for high risk (Code 1 or 2) sensitive items should be based on the following parameters.

(a) Denial of accessibility to criminal intrusion by centrally locating at maximum distance from station boundaries.

(b) Consolidate storage areas readily controlled by security personnel for authorized access.

(c) Select magazines or magazine groups that are capable of conversion to hardened storage by perimeter security measures (fencing, Intrusion Detection Systems (IDS), protective lighting, and/or nonworking hours patrols).

(3) For medium- and low-risk sensitive items, and for ordnance items not coded as sensitive, magazine selection should be based on consideration of Fleet demand and on storage accessibility to station shipping/out-loading points.

d. The activity weapons/ordnance officer is responsible for the ordnance storage arrangement. Subordinates of this officer are responsible for the location of ordnance by lot number or serial number, and the internal arrangement of the ordnance in each magazine. Individual magazine storage plans should provide ready accessibility for:

(1) Locating specific lots for issue, QEA sampling, and reclassification action due to NARs.

(2) Conducting physical inventories.

(3) Applying or changing OPSCAN labels.

(4) Conducting surveillance inspections.

e. In developing individual magazine storage plans, NAVSEA ordnance activities should comply with NAVSEAINST 8024.2. The stowage plan policies described in enclosure (3) to NAVSEAINST 8024.2 are prescribed for all other ordnance activities for use in optimizing local magazine utilization.

(1) Eighteen inch aisle spaces shall be maintained between every other pallet row in order to facilitate the sight checks and bar code scanning required for physical inventory, inspection, lot/serial controls, and other stowage management functions.

(2) Pallet spacing and stacking configurations shall be directed towards the objective of allowing access to a desired pallet stack with a maximum of three stack movements, except for bombs which are jam stowed.

(3) Pallet setdowns shall be no more than four deep.

(4) Spacing and stacking shall allow access by traditional/manually operated forklift operations, and will allow a 90 degree turn setdown after coming through the door.

(5) Maximum stacking height requirements shown in layout diagrams and used in magazines shall take into consideration the type of assets and containers to be stowed. Stacking limitations in applicable Weapons Requirement documents and military standards (e.g., MIL-STD-1323-169) shall not be violated.

(6) Storage compatibility regulations of OP 5 and quantity/distance restrictions require strict compliance.

(7) Spacing and stacking shall facilitate executing FIFO issue processing policy.

(8) Diagram layouts notwithstanding, total ordnance stored in magazines shall not exceed the allowed NEW.

(9) Ordnance stored in individual magazines shall not normally exceed 80 percent of the magazine's total storage capacity, i.e. the magazine shall be considered "full" (100 percent utilized) at 80 percent of the magazine's nominal storage capacity expressed in square feet.

(10) The above stowage plan policies shall be subordinate to published and "common sense" safety considerations. "Safety first" is the top priority in planning and executing magazine stowage.

6.4.5.2 Primary Stockpoints. Primary Stockpoints, in addition to the considerations identified in subparagraph 6-5.5.1, have additional temporary holding facilities to handle large quantities of throughput ordnance to minimize double handling requirements. Depending on the ship's schedule, temporary storage facilities can also be used to pre-stage ordnance for onload, thus minimizing the ship's time at an explosives pier or anchorage. There are three types of temporary holding facilities.

a. Barricaded rail sidings and barricaded truck areas that have been assigned specific NEW limits.

b. Unbarricaded rail sidings and truck marshalling areas, with or without NEW limits specified.

c. Explosives barges that have been assigned specific NEW limits, for holding and transporting the ordnance and inert cargo from the terminal to the ship at an explosives anchorage.

d. In all cases, temporary holding areas will be designated in an approved site plan.

e. Appropriate explosives safety and security measures have to be taken at these temporary holding facilities to minimize risk, similar to those for permanent storage facilities.

6.4.5.3 Stowage Afloat. Many of the storage considerations that a facility's ordnance officer must be concerned with have already been determined by the ship designers for the ship's ordnance/weapons officer. The ship magazines' location, size, and design are established to accommodate a specific mixture of ordnance listed in the assigned allowance(s). Any significant change in allowance requiring a change in magazine design requires an ORDALT. The most significant considerations for the ship's ordnance/weapons officer is ensuring compatibility and proper securing of all ordnance within the magazines to preclude damage due to the ship's movement while at sea, which could lead to a catastrophic event or unserviceable ordnance. For ordnance/weapons officers aboard surface combatants, ordnance magazine design and placement has left very little flexibility for ordnance distribution management. For ordnance/weapons officers aboard surface ships with magazines for cargo or mission allowances, storage plans for each of these magazines should be carefully developed to provide ready accessibility for:

a. Locating specific lots for issue, and reclassification action due to NARs.

b. Conducting physical inventories.

c. Applying or changing OPSCAN labels.

d. Assisting ship's engineering department in ensuring proper weight distribution throughout the ship.

6.4.5.4 Physical Inventory.

a. Managing a multi-billion dollar worldwide inventory requires effective controls to prevent asset disappearance and ensure asset accountability. To maintain positive control, it is essential that all assets in stowage, storage, and elsewhere (such as in transit or in production) be accounted for, and that stock record balances at all levels be main-

tained in an up-to-date status. Accurate inventory records not only reflect "good housekeeping," they are essential to Fleet support and to secure supply management practices. Therefore, one of the basic goals of the Navy's physical inventory program has been to improve the accuracy of supply system records. Attainment of this goal improves supply support, ensures accurate and timely budgetary and procurement actions, and results in the cost-effective use of limited manpower and monetary resources. The policies contained in DoDINST 4140.1 of 4 January 1993 (NOTAL) and in the Navy's supporting directive, NAVSUPINST 4440.115F, are designed to ensure good supply practices.

b. The document governing the physical inventory program for shore activities is NAVSUPINST 4440.115F. To ensure uniformity of policy, the NAVSUPINST requires that requests for policy or procedural changes be forwarded to NAVSUP, in lieu of publishing separate directives.

c. NAVSUPINST 4440.115F identifies four distinct operations comprising the physical inventory program.

(1) Physical Inventory. A physical count of items in storage for the purpose of verifying the recorded stock balance. A physical inventory consists of counts, post-count validation, pre-adjustment research, and causative research. Since the resources available to conduct item-by-item inventories are limited, the approach generally taken is one that will ensure that maximum returns are derived from the resources expended. Accordingly, it is the policy to continue to concentrate the inventory effort on those items with the greatest significance for supply support.

(2) Location Survey. A physical verification, other than actual count, between assets in storage and recorded location data. This is to ensure that all assets are properly recorded as to location, stock number, owner/purpose/Activity Classification Code (ACC), C/C, lot/serial number, unit of issue, physical security/pilferable code, and Expiration/Maintenance Due Date (EXP/MDD). Verification of actual count is not made at this time.

(3) Location audit reconciliation. A record-to-record (stockpoint-to-ICP) match to identify and correct situations where items are on stockpoint records but not recorded on ICP records, or vice-versa. It includes a match of stock number, unit of issue, owner/purpose/activity classification code, C/C, physical security/pilferable code, and quantity. For those items selected for Serial/Lot Item Tracking (SLIT) reporting, reconciliation will include a match of lot/serial number, quantity, EXP/MDD, Type Maintenance Due Code (TMDC), and Type Container

Code (TCC). The location reconciliation is initiated, and results summarized, by the ICP.

(4) Quality Control Checks. A statistically valid sample of those functions which affect stockpoint record accuracy. These checks are to be used as a management tool to identify trends and resolve problem areas. Checks are to be performed on physical inventory counts and adjustments, location surveys, and causative research.

d. NAVSUPINST 4440.115F prescribes the responsibilities at various levels for implementing the Navy's Physical Inventory Program.

(1) NAVSUP has overall responsibility for the inventory program and for all changes in policies and procedures thereto.

(2) CNO, CMC, SYSCOMs, and FLTCinCs Responsibilities.

(a) Furnish resources to their subordinate activities to support the physical inventory program.

(b) Emphasize and monitor the performance of the inventory program and evaluate its effectiveness.

(c) Initiate changes to automated systems such as CAIMS, OMS, FOSAMS, and ROLMS.

(d) Ensure subordinate activities submit reports as required and initiate corrective action when performance falls below the targets established in NAVSUPINST 4440.115F.

(e) Recommend changes to NAVSUP to improve the physical inventory program.

(3) NAVAMMOLOGCEN Responsibilities.

(a) Request, and fund on an as-required basis, unscheduled inventories of non-nuclear ordnance.

(b) Conduct location reconciliations, and furnish location reconciliation reports to NAVSUP in accordance with NAVSUPINST 4440.115F.

(c) Conduct reconciliation with the SMCA for Navy ordnance items stored at Army depots.

(4) Responsibilities of Activities Identified in Enclosure (13) to NAVSUPINST 4440.132A.

(a) Establish an organizational component independent from the stock control or warehousing components to perform the physical inventory program.

(b) Designate an "Inventory Accuracy Officer" as required by NAVSUPINST 4440.132A, regardless of inventory dollar value, who will be responsible for providing information on Physical Inventory Program performance. The inventory accuracy officer can be the same individual for both ordnance and general supplies. "Inventory accuracy officer's" name, code, auto-von and commercial phone numbers will be forwarded to NAVSUP (SUP 064), with a copy to NAVAMMOLOGCEN and the major command at the beginning of each fiscal year, using the message format contained in NAVSUPINST 4440.132A. Changes during the fiscal year will also be provided in writing within 30 days of the change.

(c) Designate an "inventory coordinator" who will be responsible for planning, resourcing, and executing Physical Inventory requirements. The inventory coordinator can be the same individual for both ordnance and general supplies. Coordinators are also responsible for compiling and preparing quarterly physical inventory reports. The inventory coordinator's name, code, auto-von and commercial phone numbers will be forwarded to NAVSUP (SUP 064), with a copy to NAVAMMOLOGCEN and the major command at the beginning of each fiscal year, using the message format contained in enclosure (13) to NAVSUPINST 4440.132A. Changes during the fiscal year will be provided in writing within 30 days.

(d) The Inventory Coordinator will assure there is positive control over all in-process transactions and material which will affect the outcome of the inventory when conducted on an "open for business" basis. If positive control cannot be achieved, the Coordinator will suspend processing of low priority issues or perform a "closed inventory" in which all transaction and material processing is frozen.

e. Requirements for All Stockpoints.

(1) A scheduled, complete physical inventory of controlled ordnance items will be conducted.

(a) Ammunition and Explosives (A&E) Security Risk Category I (Security Codes 1, 5, and 6) will be inventoried semi-annually in accordance with DoD 5100.76-M.

(b) A&E Security Risk Category II, III, and IV (Security Code 2, 3, 4 and 8) will be inventoried annually.

(c) All other controlled items (Security Code A-H, J-L, S and T) will be inventoried annually.

(d) Non-controlled ordnance and sonobuoy items will be inventoried annually.

(e) All other non-controlled items will be inventoried annually, unless resources are not available to perform the complete inventory, in which case a random sampling technique may be used.

(2) Items subjected to the random sample will be prioritized into the following categories.

(a) Items in Cogs 4T, 6T, 8E, 8S and 8T.

(b) Ordnance items with a catalog unit price greater than \$1,000.

(c) All other ordnance items.

(3) Category Samples which do not meet the prescribed CNO directed 99.5 percent accuracy will require the entire category to be inventoried within 90 days.

(4) NAVSUPINST 4440.115A, Table 12-1, provides sample sizes in relation to number of items per category.

(5) Unscheduled spot inventories of warehouse refusals will be conducted when material is on record, but not found in location during material movement functions (e.g. issuing material).

(6) Unscheduled spot inventories will be conducted when the MILSTRIP requisition(s) received from the IM is rejected (bouncedback) and transaction history match does not resolve the discrepancy. This occurs when a requisition is received and the material on-hand at the stockpoint is not available or not found.

(7) Unscheduled spot inventories will be conducted when, during location survey, material is on record, but not found in location, or when material is found in the location but is not on the record.

(8) Unscheduled spot inventories will be conducted when location (e.g. storage magazine) has been compromised.

(9) Unscheduled inventories will be conducted as requested by the ICP, to resolve record/quantity mismatches identified during the annual location reconciliation, when no inventory was conducted within 90 days, and where transaction history match does not resolve the discrepancy. If an inventory was conducted within 90 days, the stock record balance will be provided in lieu of physical count.

(10) Unscheduled special inventories will be conducted as requested by the ICP where asset position cannot be determined after review of transaction history. If an inventory was conducted within 90 days, the stock record balance will be provided in lieu of physical count.

(a) For DBOF Activities (NAVSEA ordnance stockpoints), if item has already undergone the physical inventory, funds will be provided to accomplish the special inventory.

(b) For other activities, special inventories will be coordinated with the activity's major command prior to request being sent.

(11) A record-to-record reconciliation between the locally maintained manual location file and automated stock records will be conducted upon completion of the item (NSN) inventory.

f. The physical inventory process is described in detail in NAVSUPINST 4440.115A and will not be restated here.

6.4.5.5 Ammunition Management Accountability Review (AMAR). The AMAR program succeeded and expanded upon the Ammunition Inventory Accuracy (NAIA) program. The review team's purpose is to assist ordnance activities in assessing the effectiveness of their inventory and storage management processes, and assist the activities in developing process adjustments to correct identified discrepancies. The review teams are coordinated and headed by personnel from NSWC DIV Crane.

6.4.5.6 Inventory Control Effectiveness (ICE) Report. ICE reporting is a DoD-leveled requirement governed by NAVSUPINST 4440.115A within the Navy. DoD requires separate reporting of high-risk items and low-risk items, as defined in the instruction. The ICE report covers more than non-nuclear ordnance. However, only the sections of the report covering ordnance reporting will be discussed here, and are found in enclosure (12) of the NAVSUPINST. This report provides high level visibility of the accuracy of each designated command's inventory control processes.

a. Report Content. The ICE report for non-nuclear ordnance covers results from the prior quarter's actions, consisting of three sections.

- (1) Physical inventory results.
- (2) Error Classification Code (ECC) Summary.
- (3) Location Surveys.

b. ICE Reporters. NAVSUPINST 4440.115A contains a listing of the ordnance activities which are required by DoD to submit a quarterly ICE report.

c. Reporting Requirements

(1) Required ordnance activities will report the results of ordnance inventory actions, including causative research, each quarter in each of the three report sections. A substitute printout may be used in place of the form (DD-M(Q) 935) provided in the instruction if the automated printout from the command automated inventory system provides the required information. Inventory statistics for both Navy-owned ordnance assets and OT Cog items are to be included in the report. Major commands will use the reports to ensure problems in inventory processes are identified and corrected.

(2) Reporters are required to submit their quarterly ICE report to their major command, with a copy to NAVAMMOLOGCEN, no later than 15 calendar days after the end of the quarter. The reporter must ensure that all shortfalls are explained and corrective action identified

when performance falls below the target goals established in the governing instruction.

6.4.5.7 Inventory Discrepancies. Discrepancies found through inventory processes must be properly reported to ensure the stockpile databases are updated to accurately reflect what is in each magazine. The two reports which cover inventory discrepancies are described in section 4-4.

6.4.6 Issue. Some of the topics covered must also be considered for receipt and during storage to minimize the effort required during the issue process. They are only covered here to eliminate duplication.

6.4.6.1 Fleet Issue Policies

a. Service Ordnance. Service ordnance to fill deploying ships and Fleet units' shipfill, interim or tailored allowances must be RFI. This includes C/C A, B, and C ordnance items.

b. Training Ordnance. Ordnance for training should be issued from available C/C B or C material whenever possible. If appropriate C/C B or C items are not available, C/C A ordnance of the oldest lots or those with the shortest interval to expiration of the MCP should be issued.

c. Overseas Fleet Bases. RFI ordnance with at least two years remaining to expiration of the MCP should be issued to overseas bases.

6.4.6.2 Remnant Lots. For gun ammunition (3"/50 - 16"/50) minor variations in projectile weight and propelling charge powder weights that exist from lot-to-lot can cause changes in dispersions in range. Accordingly, issues of service gun ammunition to fill ships' allowances should normally be made from a small number of lots. However, an adequate number of lots should be issued to ensure reclassification action does not result in an unacceptable degradation in ship's ordnance availability. With a long-term application of the issue of large lots to ships, a build up of remnant lots occurs. As a rule, remnant lots should be issued whenever possible for use in training.

6.4.6.3 Quality Assurance on Issue. Ordnance Issue is a general term in ordnance stockpile management that covers transfers from retail or wholesale activity stocks to any activity, regardless of C/C. Ordnance issues to Fleet ships and using activities must be made with serviceable RFI ordnance, as certified by the issuing activity. Ordnance issues to retail or wholesale activities ashore to fill Load Plan requirements in support of the Fleet are usually made with serviceable RFI ordnance, as certified by the issuing activity. Each activity commanding officer is responsible for ensuring that serviceable ordnance is issued, unless

otherwise directed (i.e., issue of assets to a maintenance activity). The quality assurance department, within primary stockpoints, is assigned QE and verification as serviceable for issue responsibilities. At secondary stockpoints responsibility is assigned to the weapons/ordnance officer and may be delegated to ordnance personnel assigned quality assurance functions.

6.4.6.4 Sensitive Item Issues. Issue of sensitive items or nonsensitive classified items, and for items coded 5, 6, or 8, involving transfer via rail or truck is accomplished in accordance with DoD 5100.76-M or DoD 5200.1-R, whichever is most stringent. In conjunction with quality verification for serviceability during issue, a verification of quantity shall be made by inspection, including where practicable, the opening of unsealed containers for code 1 and 2 items. Discrepancies are reconciled and corrected quantities entered on DD Form 1348-1. After verification, containers of code 1 and 2 items shall be sealed with a numbered seal and the numbers recorded. The use of Signature and Talley, DD Form 1907, should be used as custody passes from magazine warehousing to receiving personnel.

6.4.6.5 Shipment Consolidation. When an MRO is received at an SMCA storage site, the quantity to be issued is

consolidated with other shipments whenever possible. However, consolidation is waived when it would jeopardize meeting the requiring activity's required delivery date (RDD). MROs are processed by the Single Manager within the Uniform Material Movement and Issue Priority System (UMMIPS) time frames.

6.4.6.6 Issue Replenishment. As a retail activity's stocks become depleted through issues, replenishment is requisitioned in accordance with NAVSUP P-724 (NOTAL). Replenishment of stocks is expedited when standard requisitioning procedures are followed, and due care is taken in the assignment of coded data elements. For example, when small multi-packed items are requisitioned for stock replenishment, the quantity requested should equal the quantity of the container contents or the advice code 5H (furnish nearest package quantity to quantity requested) should be specified. Prior to requisitioning ordnance to fill load plan levels, stockpoints should review available resources, such as on-hand unsegregated ordnance and items in C/Cs E and F which can be processed and returned to stock as RFI. Item priorities in the listing of readiness deficiencies issued by NAVAMMOLOGCEN, may be modified to replenish stocks from on hand assets awaiting segregation or maintenance. IFI funds are provided for maintenance of rapid turnaround ordnance to replenish station requirements, and for transportation charge avoidance.

CHAPTER 6.5

Requisition and Return Management

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CHAPTER 6.5

Requisition and Return Management

6.5.1 Inventory Responsibilities.

6.5.1.1 General. NAVAMMOLOGCEN is the Inventory Control Point (ICP) to which ordnance items are assigned for inventory management. As ICP, it performs centralized system-wide inventory management functions as outlined in the Joint Memorandum of Understanding between the NAVAMMOLOGCEN and COMNAVSUPSYSCOM. The document is a charter, defining the joint responsibilities for the technical and supply management of non-nuclear ordnance. In the performance of its supply support mission, NAVAMMOLOGCEN refers to COMNAVSEA-SYSCOM and COMNAVAIRSYSCOM for technical/program guidance and program funding, and to COMNAV-SUPSYSCOM for supply system policy/procedures.

a. As the Inventory Manager (IM) of ordnance material, NAVAMMOLOGCEN deals directly with OPNAV, the Type and Force Commanders, SYSCOMs, and the SMCA. These relationships involve interfaces relating to program direction and funding, reports formulation and exchanges, asset visibility information, and near real-time systems integration with central data banks. Some surface ordnance Cog IM responsibilities still reside outside of NAVAMMOLOGCEN. These IMs follow the same procedures as the NAVAMMOLOGCEN IMs in managing their world-wide stockpile. They will transfer IM responsibilities to NAVAMMOLOGCEN in the near future, and for that reason are not further identified.

b. NAVAMMOLOGCEN is charged with broad inventory management responsibilities. This involves receipt, control, and distribution of requisitions for wholesale stocks and the coordination of security assistance and interservice support requirements. They also assist PEOs and PMs in formulating budget and apportionment estimates and in providing requirements projections data.

(1) Maintain worldwide asset status visibility by receiving and recording transaction reports from approximately 1100 reporters of ordnance items.

(2) Receive and process requisitions for wholesale stocks. Distribute ordnance from new production and maintenance activities. Redistribute existing inventories to satisfy changing Fleet requirements.

(3) Perform centralized financial inventory accounting and accomplish billing for stockpoints in connection with the movement of material.

(4) Stratify ordnance assets to identify long-supply and potential excess items.

(5) Serve as the single commercial transportation management office responsible for the planning, coordinating, and monitoring of overseas shipments of Navy, Coast Guard, Marine Corps (when supplied from naval activities), and FMS ordnance.

c. Quality staff personnel perform quality audits on Fleet and minor CONUS activity transaction reports, and monitor and distribute worldwide asset information. Also, the staff develops diagnostic programs to identify and resolve systemic problems related to CAIMS file integrity and to asset and financial reporting.

6.5.1.2 Ammunition Management Office (AMMO). Another major player in the inventory management process is the AMMO located within NAVAMMOLOGCEN AMMO Detachment Atlantic and NAVAMMOLOGCEN AMMO Detachment Pacific. These personnel work directly with the TYCOM personnel and weapons/ordnance department personnel from individual activities in managing the retail inventory in direct support of users. Each AMMO provides a single point of contact for their customers, and retail supply points for requisition management and tracking.

6.5.1.3 Responsibilities of fleet units and shore activities having custody of ordnance.

a. Custodial accountability for ordnance in their possession.

b. Property management, including responsibility for damage, loss, or destruction of ordnance in their possession.

c. Reporting, as required by NAVAMMOLOGCEN, the status of assets in their possession by quantity, lot number, serial number, and condition.

d. Perform physical inventories of assets in their possession and maintain accurate stock records. The physical inventory program is described in section 6-5.

6.5.1.4 SMCA-Assigned Ammunition. The inventory management responsibilities for SMCA-assigned ammunition are specified beyond that which is listed for all other Navy-assigned ordnance.

a. The IM responsibilities for SMCA-assigned ammunition is contained in DoDINST 5160.68 of 8 March 1995 (NOTAL). The instruction assigns the following IM responsibilities to the SMCA.

(1) Provide inventory management for assigned conventional munitions.

(a) Responsible for custodial accountability for assigned ammunition. SMCA is relieved of custodial accountability upon receipt by Military Service-accountable officers at the first retail point.

(b) Responsible for property management, including the responsibility for damage, loss, or destruction of assigned ammunition. SMCA is relieved of property management responsibilities upon receipt by Military Service-accountable officers at the first retail point.

(c) Report, as required by the Navy, the status of assigned Navy-owned assets by quantity, facility location, lot number, and condition.

(2) Operate SMCA installations and facilities. Provide direction in inventory management, including the receipt, storage, maintenance, and issue of wholesale conventional ammunition.

(3) Aggregate, coordinate, and consolidate with the Services for procurement, maintenance, and demilitarization requirements.

(4) Develop and implement a wholesale distribution system to meet projected and contingency needs of the Military Services.

(5) Perform physical inventories and maintain accurate stock records.

(6) Issue wholesale stocks, based on demand documentation transmitted by the Military Services, in accordance with customer requirements.

b. DoDINST 5160.68 of 8 March 1995 (NOTAL) assigns the following inventory management responsibilities for SMCA-assigned ammunition to the Military Services.

(1) Provide peacetime and time-phased replenishment requirements to the SMCA. (Provided by each PM through NAVAMMOLOGCEN).

(2) Determine requirements and financial accountability, and provide the SMCA with information and appropriate support so the Service operational requirements can be met. (Provided by each PM through NAVAMMOLOGCEN).

6.5.2 Requisitioning.

6.5.2.1 General. Basic instructions concerning the policy, scope, and procedures for processing MILSTRIP requisitions are contained in COMNAVSUPSYSCOM and NAVAMMOLOGCEN publications. Specific ordnance requisitioning procedures, ashore and afloat, are contained in NAVSUP P-724 and FLTCinC instructions. Specific procedures governing requisitioning channels and draw down of OT cognizance material by U.S. Marine Corps units are outlined in U.S. Marine Corps directives. Material needs are satisfied by the preparation and submission of MILSTRIP requisitions, redistribution orders, and referral orders. These represent supply action documents initiated in connection with the following.

a. Ordnance required for annual training exercises, or as replacement for ordnance expended during Fleet exercise training.

b. Stockpoint requirements for ordnance to fill or replenish Load Plan levels.

c. Ordnance required in support of RDT&E programs, maintenance programs, or ordnance evaluation.

d. Ordnance required to fill ship service allowance for deployment.

e. Ordnance required due to adjustments in mission loads or underway replenishment ship cargo loads.

f. IM-directed relocation of ordnance from coastal to inland activities due to lack of storage space/obsolescence.

g. Initial on-load of ordnance for newly constructed or reactivated ships, and on-load of ordnance for ships leaving overhaul.

h. Segregation of ordnance being transferred to a disposal account and movement to disposal.

i. Ordnance requisitioned for AE contingency cargo load.

j. Requisitions submitted to establish reservations or redistribution under fairshare allocations.

k. Marine Corps class V(W) ground ordnance requisitioned as LFORM cargo for loading aboard amphibious ships for deployment or Fleet exercise.

6.5.2.2 Requisitioning Document. The MILSTRIP document for material movement is the DoD Single Line Item Requisition System Document, DD 1348 or 1348M (Mechanical). MILSTRIP also provides for a message format. The creation of the NAVAMMOLOGCEN AMMO Detachment Atlantic and NAVAMMOLOGCEN AMMO Detachment Pacific allows the customers to requisition by plain language message. The AMMO personnel will transcribe the requisition into MILSTRIP format and refer it to the appropriate stocking point. There are three common uses of the DD 1348 for satisfying material requirements.

a. Requisition. The document is originated by the requestor and submitted to an IM to obtain material.

b. Referral Order. The document is initiated by a stockpoint or IM to pass a requisition for continued action when stock is not locally available.

c. Redistribution Order. Used by the IM to move or reposition material between reporting stockpoints. (Redistribution is the exception to the "pull" system since it is a directed action.)

Requisitions for OT cognizance material (other than those for LFORM requirements) will continue to be forwarded for coordination and referral to CMC (Code LMG).

6.5.2.3 Method of Transmission.

a. AUTODIN is used for high-speed transmission of requisitions and referral orders, where facilities exist and when exception data is not included in the requisition. When AUTODIN facilities are not available or exception data precludes transmission, requisition by mail or administrative message is used, depending on the priority of the requisition. For priorities 01-03, messages are prescribed. For priorities 04-08 the preference is the use of message when practicable. For lesser priorities, it is desirable to use mail. Unclassified message communication is normally transmitted through DAAS.

b. Requisitioning in English (RIE). A simplified, plain language method used to requisition non-nuclear ordnance. RIE can be sent via naval message, letter, FAX, or by the Streamlined Alternative Logistics Transmitting System (SALTS) to the appropriate NAVAMMOLOGCEN AMMO Detachment.

c. CAIMS can be used to directly input requisitions. Direct input into CAIMS goes through a step-by-

step computer driven process that does a logic check on each field at the time of entry. The other transmission methods do not include this logic check until the requisition reaches CAIMS.

6.5.2.4 Uniform Material Movement and Issue Priority System (UMMIPS). The efficient movement and issue of non-nuclear ordnance items depend on consideration of the relative importance of demands for system resources, such as material assets, transportation, manpower, processing capabilities, etc. Under UMMIPS the relative military importance of an activity or special project is indicated by a Force/Activity Designator (F/AD), assigned by the headquarters organization having command and support responsibility (i.e. COMNAVSEASYS COM, TYCOM, etc). The F/AD is used by the requisitioning activity in conjunction with a variable Urgency of Need Designator (UND) to determine the numeric Issue Priority Designator (IPD) to be indicated on each requisition. The derived IPD expresses its relative military urgency during requisition, issue, and movement transactions. The UMMIPS system is fully described in OPNAVINST 4614.1F. UMMIPS procedures apply to organic supply support operations and to stocked items only. In no instance are F/ADs or IPDs assigned for government contractor use. A different system is used for establishing contractor production and delivery priorities. Fleet Commanders, CMC, and Systems Commands are responsible for assigning F/ADs to the activities under their respective commands. To prevent proliferation of high priority requisitions, OPNAVINST 4614.1F requires that F/AD assignments be strictly observed and that the assigned IPDs be consistent with the actual urgency of need. To ensure compliance, the OPNAVINST requires close system monitoring by headquarters activities of assigned F/ADs, and continuing local review of specific higher priority IPDs. Local assignment of UNDs is determined by applying the urgency of need guidelines contained in enclosure (3) of OPNAVINST 4614.1F. The following generalization suffices for present purposes.

a. UND A. Used when the requirement is immediate and without the needed material the activity is or will shortly be unable to perform its mission;

b. UND B. Used when the requirement is urgent but not yet critical and could result in impairment of the mission if material is not received in a timely manner.

c. UND C. Used for more or less routine requirements such as stock replenishment, material to meet scheduled deployment, the initial ordering of allowance list material, or when the required delivery date for the material is sufficiently in the future.

The following matrix illustrates how a numeric IPD is derived by combining the activity's (or specific proj-

ect's) F/AD (I, II, III, IV, or V as appropriate) with one of three alphabetical UNDs.

	<u>UNDs</u>		
	Unable to Perform Mission	Impaired Operational Capability	Routine
<u>F/ADs</u>	A	B	C
I-In Combat	1	4	11
II-Positioned for Combat	2	5	12
III-Positioned to Deploy/Combat	3	6	13
IV-Other Activity and Selected	7	9	14
V-All Other	8	10	15

An RDD is conditionally indicated on requisitions for use in conjunction with the IPD. The RDD is a Julian date specifying when material is required by the requisitioner at a date different than the standard (published in OPNAVINST 4614.1F). When the RDD is other than the assigned standard, its Julian date is indicated in the requisition in accordance with MILSTRIP format. When an RDD earlier than the assigned standard processing time is indicated on the request document, all activities shall exert maximum economic effort (including consideration of high-speed transportation) to deliver the material by the specified RDD. When critically needed items require expeditious handling, the numerical code "999" is entered in the RDD field of the MILSTRIP requisition. Only those requisitions bearing IPDs 01, 02 and 03 for overseas, afloat, and deploying forces are eligible for "999" assignments. Specific UM-MIPS priority codes are also used for retrograde. Returned material is moved without regard to F/AD assignment of the activity or units involved, and priorities 03, 06, and 13 are automatically assigned for such use as follows.

d. Priority Designator 03. Return of critical and intensively managed items.

e. Priority Designator 06. Return of material identified by the material manager for automatic return.

f. Priority Designator 13. Routine return of material.

6.5.2.5 Special Project Codes. When warranted, specific codes are assigned to identify projects for internal processing and special marking. These codes are indicated in columns 57-59 of the MILSTRIP requisition and are perpe-

tuated on all related documentation, and as part of the shipping container markings. Project codes are used to identify requisitions and related documents to enable managers to monitor shipments and accumulate costs and performance data pertaining to:

- a. Special projects.
- b. Programs.
- c. Certain operations.
- d. Exercises and maneuvers.

Such codes do not provide or imply priority for requisition processing or supply decisions. To do so, requires that the assigned project code be used in conjunction with an appropriate IPD. COMNAVSEASYS COM has stipulated that project codes in the 800 series will be reserved for requisitioning and turn-in of Navy and Marine Corps non-nuclear ordnance. Requests for the assignment of new project codes for recurring use in requisitioning and turn-in of non-nuclear ordnance are coordinated with NAVAMMOLOGCEN by COMNAVSEASYS COM. Requisitions with OSD or JCS project codes are ranked above all other requisitions with the same priority designators. When system-wide inventory levels do not permit positive supply action on all requisitions with a given priority designator, supply procedures will provide for a release of requisitions containing OSD and JCS project codes. A listing of non-nuclear ordnance project codes is found in NAVSUP P-724 (NOTAL).

6.5.2.6 Requisition Processing.

a. CAIMS validates the entries in any requisition, whether directly input to CAIMS or entered via DAAS. Fleet requisitions with errors are routed by the IM to the appropriate AMMO Detachments. AMMO Detachments will liaison with the requisitioner and try to correct the error(s), or explain why the requisition is invalid.

b. Valid requisitions go through an automatic sourcing process. If the ordnance ordered is available at load sites, CAIMS automatically refers the requisition to the load site to fill. There are exceptions to this automated sourcing.

(1) Requisitions with one of the following conditions will be routed to the appropriate AMMO Detachments, or NAVAMMOLOGCEN IM.

- (a) Issue Priority Group I, Priority 1, 2, or 3.
- (b) Remarks.

(c) Errors, or the quantity exceeds allowance.

(2) Requisitions for the following ordnance material will be routed to the appropriate IM.

(a) 2D Cog ordnance.

(b) AEPs/CADs will be submitted in accordance with NAVSUP P-724 (NOTAL), chapter 1, section 8.

(c) Ordnance material whose NSN is coded with an Issue Restriction Code.

c. When the ordnance material requisitioned is not available at the load site, the requisition will be directed to the appropriate AMMO Detachments. The AMMO Detachments personnel will look for the most cost effective source of the ordnance. Ordnance may be sent from another stocking point, or cross decked from another unit.

d. If the ordnance is not available in the AMMO area of responsibility, the requisition is forwarded to the appropriate IM at NAVAMMOLOGCEN for action.

e. AMMO Detachments and theater logistics agents will coordinate shipfill/cargo load cross deck opportunities whenever the chance arises, in accordance with Fleet load plans, to meet requisitioners' needs. This includes having needed top off ordnance aboard duty AE/AOE ships during major Fleet exercises. Keeping serviceable ordnance at sea is cost effective and efficient.

f. AMMO Detachments personnel, IMs, or stock point personnel will adjust requested quantities to unit pack quantities whenever possible to save time and money. The requisitioner will be notified of any changes in quantity.

g. Status Messages.

(1) When AMMO Detachments personnel process RIE requisitions, they send a status message in MILSTRIP format to the requisitioner and supplementary addressee within 5 working days, notifying them of the requisition by serial number and initial action taken.

(2) For loads at NAVAMMOLOGCEN ordnance handling activities, AMMO Detachments personnel will ensure a message is sent approximately 30 days prior to the start of the loadout evolution. This message will give the complete status of all outstanding requisitions for that requisitioner in an easily understood format and will indicate the point of contact for onload coordination. This message will be followed up with another message seven

days prior to the start of the evolution, with the status of all the requisitions and other details.

6.5.2.7 Requisition Validation and Monitoring. The MILSTRIP requisitioning system, prescribes procedures, forms, formats, and documents which are mandatory for requisitioners, and supply support activities. Its uniform codes, forms, formats, and procedures for transmitting requisitioning data apply in the Navy supply system to all centrally managed items. The detailed procedures for processing requisitions are predicated on the need for accurate inventory system recordkeeping and accountability, and for effective material support of the Fleet. Violations of the standard MILSTRIP format and communication/delivery media tend to impair the integrity of the MILSTRIP structure and minimize its effectiveness. For such reasons, the validation and monitoring of material requests (manually and by automated means) are features of the MILSTRIP requisition process. The range of data that requires validation by the supply source during processing is extensive and therefore beyond the scope of this manual. Validation procedures are documented comprehensively in the NAVSUP P-724, (NOTAL), FLTCinC instructions, and in the field activity internal procedures manuals. MILSTRIP document requiring validation and the processing action to be taken in each case. At stockpoints where stock records are computerized, it is essential to maintain stringent quality control to ensure machine acceptance of requisition data. Screening of requisitions against authorized allowances and station Load Plans is performed by NAVAMMOLOGCEN personnel. This screening is primarily to resolve conflicting demands concerning the distribution of material among several claimants, or between Fleet combat and NCER requirements, when material is in a low stock position. In such cases, resolution of allowance conflicts is coordinated by the item manager based on his knowledge of the exceptional nature and priority of activity requirements.

6.5.2.8 Requisitioning Ordnance from the SMCA

a. SMCA-Assigned Items. Requisitions to SMCA for ammunition items to be filled from wholesale stock are forwarded to the IOC by NAVAMMOLOGCEN. This is accomplished by using a MILSTRIP Release Order (MRO) indicating a document identifier in the A4-series. The IOC selects the source of supply and directs shipment by issuing a Material Release Order to the SMCA storage site. Shipment status is provided when a valid distribution code is indicated in the referral order. The IOC does not accept requisitions submitted directly by Navy retail customers; such requisitions received by the IOC are passed to NAVAMMOLOGCEN.

b. Non-SMCA-Assigned Items. Material Release Orders for non-SMCA-assigned ordnance items stored at

Army storage sites are submitted directly to the storage site by NAVAMMOLOGCEN. Copies or facsimiles of such release orders are provided to the IOC. In turn, the storage site will forward a Material Release Confirmation to NAVAMMOLOGCEN.

c. Material Release Denial (MRD). An MRD is prepared in MILSTRIP format by the storage activity for that portion of the total quantity specified in the requisition/MRO which cannot be shipped.

6.5.2.9 Follow-Up Modifier Actions or Cancellations. The Navy or Marine Corps unit initiating a requisition, regardless of where it has been referred to, shall submit follow-up modification or cancellation requests in MILSTRIP format to NAVAMMOLOGCEN (NCB), AMMO LANT (NTW), or AMMO PAC (NTV), or in RIE format to the appropriate AMMO. An information copy will be submitted to the loadout point, unless the unit is overseas. When units are deployed or homeported overseas, theater guidance for addressees applies.

6.5.3 Inter-Service Support

6.5.3.1 U.S. Marine Corps

a. General.

(1) MARCORSYSCOM (Code AM), as IM, is responsible for establishing, maintaining, and promulgating allowances and changes thereto for class V(W) ordnance items. Also, MARCORSYSCOM budgets and determines procurement quantities and directs the distribution, storage, renovation, and disposal of ordnance under CMC cognizance, and provides funding for certain services furnished by the Navy for items in the custody of NAVAMMOLOGCEN subordinate commands.

(2) Marine Corps class V(W) ground ammunition is identified and carried on supply records under the cognizance symbol OT. This category of non-nuclear ordnance consists of ground support ammunition items, related components, and piece parts representing approximately 800 DoDIC/NALCs. Many items under OT Cog are also in the Navy system as 2T Cog, and identified by the same DoDIC/NALC. These items are SMCA-assigned ammunition items and, with few exceptions, have been produced under SMCA's design engineering, configuration, and quality control. Separate records for OT Cog (USMC ownership) and 2T Cog (USN ownership) are maintained for these common items at all wholesale and retail stocking points.

b. Supply Management of OT Cog Ammunition

(1) In CONUS, OT Cog stocks are allocated, stocked, and maintained at Marine Corps ammunition supply points, at Navy retail stockpoints, and specified U.S. Army activities. The PWRMR OT Cog ammunition items authorized in the MARSOs for stocking at the Navy stocking points are reviewed by the Navy Major Claimant and incorporated into the Load Plan of the applicable Navy stockpoint. OPNAVINST S8010.12E (NOTAL) stipulates that storage space requirements for OT Cog material at Naval stockpoints be negotiated triennially between the Marine Corps and the Navy.

(2) OT Cog material is held in segregated storage in the magazines of the Navy stockpoints. The receipt, storage, and issue services provided by the stockpoints for these items are performed without charge to the Marine Corps, as are the related services such as banding, restowage, physical inventory, inspection, and the handling and refurbishment of items in C/C E. The Navy is reimbursed for renovation of C/C F material. Further, the Marine Corps defrays the cost for off-station transportation of OT Cog items. Centralized cataloging functions for OT Cog material are performed by NAVAMMOLOGCEN as the cataloging agent for ordnance material. These items are included in the various cataloging publications issued by NAVAMMOLOGCEN.

(3) Requests for disposition instructions for excess or unserviceable material will be submitted to CMC via letter or message containing the following.

(a) NSN and DoDIC/NALC.

(b) Nomenclature.

(c) Lot number.

(d) Quantity and C/C.

(e) Reason for request (e.g., excess to local requirements, unserviceable, etc.).

(f) Availability and identity of other military activities within the area capable and willing to dispose of the class V(W) material in question.

(g) Availability and identity of other military activities in the area willing to accept serviceable assets on a nonreimbursable basis, if CMC (Code LMG) finds that specific item and quantities are too small to economically repack and ship to another location.

(4) When ammunition is turned in to a storage activity, a DD 1348-1 is prepared.

(5) Occasionally, class V(W) material fails to perform as designed. Accordingly, a NAR is issued by

NAVAMMOLOGCEN, as directed by the Marine Corps PM, to notify users of restrictions in issue or use. Ammunition in stock subject to such reclassification action is separated from other ammunition, and is marked to preclude issue.

(6) When Marine security detachments are located at Navy stations, Marines will provide their own weapons and ammunition support. However, Marine detachments manning or using Navy weapons, will be supported by the Navy, including ammunition for training.

c. Landing Force Operational Reserve Material (LFORM) Allowances. The class V(W) segment of the LFORM is comprised of the ground ammunition items and heavier ammunition items in support of Marine operated artillery and tanks. LFORM material is that portion of the total PWRMS maintained aboard amphibious ships to provide support of embarked troops during operational contingencies. LFORM stock levels reflect the support required for a deployed Marine Amphibious Unit (MAU). These levels are based on the expenditure and consumption rates established for a typical MAU, adjusted by experience factors, and constrained by the ship types within the particular MAU. Accordingly, the quantity of LFORM material positioned aboard each amphibious squadron varies with the number and types of ships assigned.

(1) LFORM is positioned aboard designated amphibious warfare ships, unless the individual ship is in overhaul, or if removal of stored items is required to perform ship repairs during a Restricted Availability (RAV). Under these circumstances, material is turned into the nearest Naval stockpoint. A refurbished class V(W) package will be reloaded within 60 days following completion of overhaul.

(2) Navy primary stockpoints provide the following support of LFORM.

(a) Provide and package class V(W) material as may be requisitioned.

(b) Inspect, rotate, and/or refurbish material required.

(c) Provide to the ship a manifest of all LFORM class V(W) loaded aboard, within five working days after loading.

(d) Upon completion of embarkation or debarkation of class V (W), provide applicable issue/receipt documents, (DD Form 1348-1), to the applicable Force Commander.

6.5.3.2 U.S. Coast Guard.

a. General.

(1) The policy of exchanging personnel, vessels, facilities, equipment, supplies, and services between the Navy and the U.S. Coast Guard is based on statutory authority (Title 10, U.S.C., Section 2571 and Title 14, U.S.C., chapter 145). The logistics support policy existing between the Navy and the Coast Guard is issued by OPNAVINST 4000.79A (NOTAL).

(2) The logistics arrangements agreed to by the DoN and the Department of Transportation (DoT). This agreement covers broad policy and general procedures for all areas of interservice supply support between the Navy and the Coast Guard and defines joint financial responsibilities. Although the scope of the agreement extends to all commodity areas, it also defines the specific responsibilities of COMNAVSEASYSOM for supply support of surface non-nuclear ordnance. Changes to the agreement must be approved by CNO and the Commandant U.S. Coast Guard. Financial arrangements in the agreement must be approved by the ASN(FM&C).

b. Budgeting and Procedures.

(1) CNO's policy is to provide all required Navy-owned ordnance to the Coast Guard to ensure the ready integration of the Coast Guard, or its specific units, into the Navy in time of war or other emergency (as approved by the President). The Navy PEOs/DRPMs program, budget, and fund for surface ordnance required by the Coast Guard. Initial requirements for ordnance above 40mm are provided free to the Coast Guard. The cost of such items is financed by direct expenditure to Navy appropriations. The scope of Navy support for free-issue items includes the following.

(a) Scheduled replacements for mission improvements.

(b) Replacement of defective ordnance.

(c) Providing Appropriation Purchases Account (APA) material to accomplish field changes or modifications.

(d) Funding for Coast Guard technical services and/or inspection of ordnance equipment in conjunction with, or separate from, U.S. Navy sources.

(e) Renovation of Navy-owned material in possession of, or turned in by, the Coast Guard.

(f) Furnishing technical and tactical publications and information related to non-nuclear ordnance.

(2) No charges are made by the Navy for the preparation and handling of ordnance items. However, the cost of their transportation beyond the local jurisdiction of the issuing activity is assumed by the Coast Guard. All items used by the Coast Guard on a cost-free basis are considered to remain Navy-owned, until expended or turned in.

(3) Reimbursement is required when small arms ammunition (40mm and below), pyrotechnics, demolition materials, and grenades are issued to satisfy approved annual requirements of the Coast Guard. In such cases, the Navy will bill the Coast Guard on a monthly basis at prices published in the Navy Stock List of Ammunition. Material billings are rendered on Standard Form 1080, supported by billing cards and a list showing document numbers and other data applicable to the sale or creditable return.

(4) The Coast Guard computes its mission and service requirements, and publishes and maintains their own afloat allowances. To enable CNO to plan and provide support, the Coast Guard provides the following program data.

(a) Annual ordnance requirements including an estimate of on- and off-load tonnages by tidewater area to the CNO, (copy to NAVAMMOLOGCEN). This is provided not later than 15 December of each year and reflects the budget year plus two subsequent years.

(b) Schedules of ships onloading and off-loading ordnance to enter the overhaul yard to NAVAMMOLOGCEN. This schedule provides each ship's hull number and indicates the stockpoint where material is to be handled. Submission is made annually by 30 June and covers the next fiscal year.

(c) Identification of the percentages of the estimated annual requirement to be allocated to east-west stockpoints, to CNO/NAVAMMOLOGCEN.

c. Activity Support

(1) The bulk of the non-nuclear ordnance support for the Coast Guard is positioned and stored under ownership code 7 at primary retail stocking points. The Coast Guard submits MILSTRIP requisitions for initial and follow-on support of surface ordnance directly to NAVAMMOLOGCEN in consonance with the Navy and Coast Guard agreement. The requisitions should indicate service code N and cite the applicable Navy fund codes and the Navy "bill-to" activity designated to accept charges (or in the case of nonreimbursement, to process statistical charges). Requisitions for follow-on support (above 40

mm) will bear a "D" or "M" signal code ("free issue") and have no fund code. In exceptional cases, where a stockpoint is the point-of-entry for such requisitions, those bearing priorities 01-03 should be used, unless the assigned issue restriction codes indicate otherwise. NAVAMMOLOGCEN should be advised of cases where issue transactions occur directly between the Coast Guard and the stocking point. Requisitions received by the stockpoint bearing issue priority designators 04-15 should be referred directly to NAVAMMOLOGCEN.

(2) Requirements for ordnance items furnished on a reimbursable basis, or for items in excess of Coast Guard requirements, are submitted on a funded MIPR to the appropriate Navy PEO/PM, or the Coast Guard may elect to satisfy its mission requirements by direct procurement from commercial or government sources, other than the Navy.

(3) Surface ordnance off-loaded at naval retail stockpoints is processed in the same manner and priority as similar material off-loaded by U.S. Navy units. Ordnance that is off-loaded for custody storage is inspected for serviceability by the Navy at no cost to the Coast Guard. Unserviceable and suspended material is replaced by the Navy on a nonreimbursable basis. The Coast Guard negotiates with NAVAMMOLOGCEN for the return of excess, surplus, or unusable ordnance for which it has paid. Coast Guard direct procurement of Navy-designed surface ordnance items requires provision of Navy Technical Documentation in accordance with governing directives.

(4) The availability, or priority, of repair services for material to be issued to the Coast Guard is determined on the same basis as support furnished to Navy units with comparable priority designators. The Commandant, U.S. Coast Guard assigns force activity designators to Coast Guard units and activities, in accordance with UMMIPS policies set forth in DoDD 4140.1 of 4 January 1993 (NOTAL).

6.5.3.3 Standing Approval List (SAL)

a. To achieve transportation savings by reducing cross-hauling of ordnance items common to two or more of the Services, the SMCA is authorized to substitute assets under ownership of one Service to satisfy a requisition by another Service.

b. Inter-Service Transfer Conditions

(1) Items must be common usage items (not Service unique), authorized by the Services for listing on the latest update of the SAL (pyrotechnics FSC 1370 are excluded).

(2) Transfers of items are made only if simultaneous replacement by record repayment at another SMCA activity can be made.

(3) The payback item must be the same NSN and in the same quantity as the transferred item.

(4) The condition of the payback item must be the same or better than the condition of the transferred item.

(5) InterService transfers are followed by issue and receipt transactions, and depot lot records are changed to reflect new Service ownership within five days.

c. Navy Criteria for Items to be Designated as SAL Items.

(1) Be SMCA-managed.

(2) Be used by one or more of the other Military Services, as evidenced by the existence of the item by NSN in their stock catalogs.

(3) Not be in Navy short supply.

(4) Not be positioned for a special purpose, such as maintenance.

(5) Not be reserved for a Navy mobilization requirement.

(6) Not be palletized in accordance with MIL-STD-1323 for transfer-at-sea.

d. Service and SMCA Responsibilities.

(1) The SMCA must obtain prior approval in each instance for interService transfers of SMCA items not on the SAL.

(2) All Services will annually review and update the SAL for additions and deletions depending on factors 6-6.3.3.c. (3) thru (6).

6.5.4 Fleet Return, Rollback, and Retrograde

6.5.4.1 General. U.S. Navy ships are deployed with their full wartime allowances (service, interim, or tailored) of service ordnance designed to fill ships magazines to capacity. Service ordnance certified as serviceable by qualified ordnance personnel ashore, is issued and if not expended is retained until all ordnance is off-loaded (e.g., at the time of "ship's availability"). Expenditures are replenished, but the basic service load may be kept aboard for up to five years, and only subjected to OLM. Eventually, the remaining ordnance is returned to an ordnance activity ashore where it is inspected, run through a segregation or maintenance line as required, and recertified as serviceable.

6.5.4.2 Fleet Return Policy. The following ordnance and ordnance details are required to be returned to CONUS from Fleet units and overseas bases (includes rollback and retrograde).

a. Serviceable ordnance in excess of local requirements - for return to stock.

b. Unserviceable - repairable ordnance in excess or beyond local maintenance capabilities, returned for maintenance.

c. Unserviceable - non-repairable ordnance returned for demilitarization and recovery of components or parts as required.

d. Serviceable ordnance details - for reuse in the manufacture, or load, assemble, and pack of new ordnance.

e. Fired cartridge cases larger than 20mm and all fired brass cases. These shall be classified serviceable/repairable/unserviceable in accordance with NAVSUP P-724 (NOTAL), and returned for appropriate processing.

6.5.4.3 Procedures and Responsibilities

a. Proper Preparation. Packing, accurate marking/labeling, and complete shipping documentation are essential for the economical and safe return and subsequent processing of Fleet returned ordnance.

b. Ships and OCONUS activities expending ordnance and ships with cargo or mission allowances (service, interim, or tailored) are responsible for ordnance return procedures as contained in Fleet/Logistic/TYCOM directives/instructions. These are enumerated as follows.

(1) Excess serviceable ordnance or unserviceable ordnance items are to be turned in to the nearest ordnance activity ashore.

(2) During expenditure, ships and Fleet activities shall retain all reusable details, as listed in NAVSUP P-724 (NOTAL) for return to the nearest ordnance activity ashore or to UNREP ships (AEs/AOEs/AORs/AOs) if practicable. This includes fired cartridge cases larger than 20mm and all fired brass cases. These shall be classified serviceable/repairable/unserviceable in accordance with NAVSUP P-724 (NOTAL) and returned for appropriate processing.

(3) Ordnance off-load of the entire allowance, for emergency repair work or yard availability, should be scheduled at a CONUS primary stockpoint.

(4) All ordnance turned-in ashore shall be documented on form DD 1348-1.

(5) In certain circumstances, such as short-term emergency ship repair, ordnance may be off-loaded for temporary storage ashore. These storage arrangements require TYCOM certification of operational necessity and the Fleet Commander's authorization. In this case the following steps will be taken

(a) The offloaded ordnance will be carried on the ship's stock records.

(b) The shore activity will store the ordnance load separately.

(c) The shore activity will return the identical ordnance that was turned in without reporting receipt or issue transactions, or inspection or sentencing

(6) Ordnance details, such as containers, cartridge/propelling charge tanks, and ordnance boxes, retained for reuse shall be 100 percent inspected and certified empty to ensure that no explosive loaded items are present. All markings describing the former contents shall be obliterated, and the container stenciled or tagged "EMPTY" or, if used for inert ordnance details it shall be stenciled or tagged "INERT."

c. Ordnance Activities Ashore. A basic logistics function of retail stockpoints is the acceptance of excess or unserviceable ordnance items and accumulated ordnance details turned in.

(1) OCONUS Ordnance Activities. Unserviceable Fleet-returned ordnance, which cannot be made serviceable with local capabilities or by means of periodic MAERU assistance, and excess serviceable ordnance items, are offered for redistribution to the IM via the Fleet Commander or his logistic representative. Accumulated ordnance details with a total weight of less than one ton may be shipped by earliest available surface transportation to the appropriate consignee listed in NAVSUP P-724 (NOTAL). For accumulations over 1 ton, request a shipping destination from the ICP.

(2) Minor, Secondary CONUS Stockpoints. The procedures for receipt by CONUS minor and secondary retail stockpoints of reusable ordnance details turned-in by tenant, neighboring expending activities, or ships, are the same as for OCONUS shore activities. Shipment to the ultimate consignee is identified in NAVSUP P-724 (NOTAL). Ordnance which may be occasionally turned-in to minor and secondary retail stockpoints, is to be taken up in stock.

(3) Primary CONUS Stockpoints. CONUS NAVAMMOLOGCEN commands on each coast are the primary points for Fleet-returned ordnance receipt. Proce-

dures for receiving Fleet returns at primary stockpoints are as follows.

(a) Shipfill Allowance Off-Loads. Ship's (own) ordnance is usually not palletized. Waterfront personnel check the items for quantity as listed on the ship's form DD 1348-1, and forward this document to Ammunition Distribution and Control (AD&C) via Production Planning and Control (PP&C) for segregation scheduling.

(b) Cargo and Mission Allowance Off-Loads. This ordnance is usually palletized. The waterfront check is performed as described in TW010-AC-ORD-010. If the material is palletized in a MIL-STD-1323 configuration and tagged in accordance with material condition tag/label indicating "Serviceable" (C/Cs A, B, or C), it is taken up in stock as serviceable. A check of lots for NAR reclassification and a visual inspection of the pallet load for damage or deterioration are performed and appropriate tags attached for unserviceable or suspended ordnance. Waterfront personnel will attach a material condition tag/label "Suspended - C/C K" to each pallet where condition is not readily determinable. Each C/C K pallet is sent to segregation.

(c) Rollback Returns. Palletized and loose ordnance returned as part of a rollback will be processed in the same manner as for ship allowance and cargo mission allowance off-loads. Receipt at the stockpoint may be from commercial or organic shippings. In either case, ordnance items will be documented on form DD 1348-1 or on a ship's manifest.

(d) Retrograde Materials. This material consists of ordnance details and inert components. Retrograde material may be included in rollback shipments, off-loaded with ordnance, or received as separate shipments of retrograde. Unpalletized ordnance details and inert components received with ship off-loads of ordnance or included in rollback shipments, should be subjected to the segregation process contained in NAVSUP P-805 and NAVSUP P-806.

6.5.5 Mobilization Planning

6.5.5.1 General. Past mobilization exercises have uncovered a number of deficiencies in providing effective support of deployed naval forces under total mobilization with other Services. The USN ordnance support requirement is only a part of the total requirement that will be levied on the national capacities during mobilization. Overland transportation of ordnance items from storage to point-of-embarkation and ordnance material outloading at sealift terminals are two examples of support requirements. With the emergence of the Joint Deployment Activity (JDA), the Rapid Deployment Joint Task Force (RDJTF),

and the SMCA, more meaningful Time Phased Force Deployment Data (TPFDD) are required from each Service to determine and schedule the aggregate requirement within existing capabilities.

6.5.5.2 Logistic Support Plan

a. NAVAMMOLOGCEN is responsible for the development of a Logistic Support and Mobilization Plan (LSMP) for all surface non-nuclear ordnance required for total mobilization. The short-range logistics support planning aspect of the LSMP concerns ordnance on hand and on order (with accelerated delivery) which is to be provided in support of Fleet OPLANS. This support is in accordance with TPFDD requirements as specified by FLTCINCs and the JDA. This support plan is to cover D-day through D+180 or as required in accordance with guidance provided by CNO.

b. SMCA is responsible for implementation of the resupply support requirements of all SMCA-assigned items in the wholesale inventory owned by all Services, and for non-SMCA assigned items in storage at SMCA activities. The SMCA has established joint policies and procedures for the mobilization support of Service-owned ordnance in the wholesale inventory. These procedures require that each Service compute its requirements, based on each OPLAN, and submit its resupply requirements in MILSTRIP format via computer tape as standby prepositioned requisitions, to be activated on mobilization by message indicating destination, embarkation point, and RDD. Resupply requirements are to be updated as each OPLAN is refined by JDA and RDJTF refinement conferences. DoD 5160.65-M contains additional details for maintenance of prepositioned requisitions and SMCA feedback reports to the Services.

c. Each PEO/PM is responsible for the overall direction and guidance of logistic support plans for their

ordnance. For each OPLAN, the logistic support plan scenario is envisioned as follows.

(1) FLTCINCs, or their logistic agents, compare OPLAN requirements to in-theater assets (includes deployed cargo and mission load stocks) and advise NAVAMMOLOGCEN of shortfalls by type, quantity, destination, and RDD.

(2) FLTCINCs advise NAVAMMOLOGCEN of Fleet "Top-Off" requirements by item, quantity, and coastal location, to be held in a "reservation status" in retail stock.

(3) Each PEO/PM initiates the preparation of prepositioned requisitions to fill the in-theater shortfalls from retail stocks remaining after reservations.

(4) All FLTCINC requirements with RDDs equal to or greater than the transit time from wholesale stock locations to the required destination are classified as resupplies. The PM initiates the preparation of prepositioned MILSTRIP tapes for submission to the SMCA.

d. Factors to be Considered in Logistics Support Planning.

(1) Ordnance items requiring minor or major maintenance may be included in support of plans, provided the maintenance can be accomplished or accelerated to meet shipment RDDs.

(2) Retail and wholesale assets selected for prepositioned requisitions must be fairshared, and any shortfalls due to fairsharing must be identified.

(3) All requisitions are to include shipping weights, in short tons, by item and requisition totals.

(4) Any shortfalls in worldwide stock to the total requirement (worst-case) thru D+180 days, or as determined by CNO, shall be identified for accelerated procurement action.

CHAPTER 6.6

Transaction Reporting

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CHAPTER 6.6

Transaction Reporting

6.6.1 Transaction Reporting

6.6.1.1 General. Asset Reporting. High material costs and limited assets necessitate accurate up-to-date reporting of world-wide naval ordnance inventories. Asset visibility is achieved when stock status of material inventories, including receipts and expenditures, is systematically reported to NAVAMMOLOGCEN for updating central files, and current summary information is published (or made available on the telecommunications network) for use by planners and IMs. In this process, the reporting field activities share responsibility for the accuracy of the information reported into the CAIMS records. In the final analysis, the reliability of the ordnance asset information system depends on the exercise of good quality control at each step of the reporting process, and on the prompt identification and correction of errors and inconsistencies.

6.6.1.2 Stock Status Reporting. Data compiled from stock status reporting constitute the basis for the all-important function of stratifying, determining requirements, and formulating the annual budget. If these data are inaccurate or inadequate, calculations for new ordnance procurements and production requirements are likewise inaccurate. The issue and redistribution of assets, maintenance planning, fairsharing, disposal, and numerous other supply actions all depend on reliable data. To ensure the accuracy of reported information, central and local file data are continuously and systematically reconciled by the IM. Navy-owned assets stored at non-Navy activities are also reported daily into CAIMS and differences, if any, are reconciled with the SMCA.

6.6.1.3 Asset Visibility. Ordnance reporting under CAIMS applies to principal end items and major subassemblies which are reported down to, and including, user level. End-item management policies dictate worldwide and in-depth visibility of items in transit. Accordingly, the CAIMS reporting network is more extensive than that of Uniform Automated Data Processing System (UADPS) where items are generally considered to be expended from

the supply system when issued from the supply officer's accountable records. Under UADPS, items issued to sub-outlets (such as shop, or retail issue store) are subject to financial accounting but do not retain visibility in a stock status transaction reporting system, nor are they considered assets in budgetary and procurement calculations. Non-nuclear ordnance end items are positioned to meet CNO-prescribed distribution objectives and require continual in-depth visibility and central management up to and including expenditure.

6.6.1.4 Governing Instructions. NAVSUP P-724 (NOTAL) contain the detailed policies, procedures, and responsibilities governing the reporting of non-nuclear ordnance. Those instructions are supplemented by the FLTCINCs.

6.6.1.5 Reporting Network. Terms used in connection with the reporting of non-nuclear ordnance are "Transaction Item Reporting (TIR)" and "Ammunition Transaction Reporting (ATR)".

a. TIR. The method of reporting stock status information to NAVAMMOLOGCEN on a daily basis via AUTODIN. Reports are submitted by the primary and major secondary ordnance stockpoints to advise of changes to any of the elements of stock status data. In addition to reporting individual item transactions, an asset status card accompanies the daily report which summarizes all reported transactions under a specific NSN, purpose code, and C/C. Negative reports are required for those items for which no transactions are recorded.

b. ATR. ATRs are submitted by naval message on an "as-occurring" basis within 24 hours of a reportable transaction by activities afloat and ashore (and commercial contractors when required), that are not on the TIR system. Under ATR reporting, the day's transactions and the opening and closing balances are reported by DoDIC/NALC for each active item. ATR reports are designed to categorize, among other things, end-use expenditures and allow for explanatory remarks.

6.6.2 Transaction Item Reporting

6.6.2.1 Reportable Actions. TIR is by NSN and is required for all transactions with D-series document identifier codes. These transactions include receipts, issues, inventory adjustments, transfers, and decapitalization. Not required to be reported are due-ins, back orders, planned requirement quantities, and reservation quantities. The TIR report consists of two parts:

a. Asset status summary card (DZA) for each line item. ADZA card is required to accompany each line item (by purpose and C/C) reported. The DZA card shows the on-hand quantity of the item after the day's transactions have been processed and is compared against the computed balance in the CAIMS central records. If the balances differ and cannot be resolved by NAVAMMOLOGCEN, the asset status card and all applicable transaction cards are returned to the stockpoint to determine the cause of the imbalance and to make corrections as necessary to the local records.

b. Transaction Reporting Card. TIR reflects changes to any element of stock status applicable to a specific line item. The transaction is specifically defined by the document identifier code indicated in the report for that item. The specific document identifier series used for reporting ordnance transactions are listed in figure 6-7-1 for information. NAVAMMOLOGCEN requires that OMS stockpoints submit DZA cards for each asset record at least twice a year to reconcile CAIMS and OMS when these records are not in balance.

6.6.2.2 Centralized Accounting and Billing (CAB). CAB is a derivative of TIR reporting. It is a system where financial inventory statistical accounting for D7-series transactions (i.e. issues) is performed centrally at NAVAMMOLOGCEN. Presently limited to designated TIR ordnance stockpoints, CAB functions include central maintenance of financial inventory control ledgers and the preparation of billing in connection with issues of ordnance. Financial inventory ledgers at NAVAMMOLOGCEN are reconciled to local records quarterly.

6.6.3 Ammunition Transaction Reporting

6.6.3.1 Reportable Actions. ATR reports are submitted by the non-TIR activities. These reporters are the minor CONUS stockpoints plus Fleet units, Forces, and minor

OCONUS shore activities. The minor CONUS stockpoints are activities without AUTODIN capabilities or activities such as reserve centers, shipyards, supply centers, test and development activities, etc. The Fleet reporters include ships (combatant, auxiliary, and reserve), various mobile units, and overseas shore activities. The ATR reports submitted by these activities to NAVAMMOLOGCEN are mechanically summarized and consolidated with report data provided by the TIR stockpoints to develop worldwide visibility of assets.

a. All Navy-owned material assigned a DoDIC/NALC is reported by the ATR activities for transactions related to:

(1) Receipts.

(2) Expenditures, issues, and transfers.

(3) Modifications resulting in changes to assigned DoDICs/NALCs.

(4) Reclassification of items from serviceable to unserviceable (or the reverse).

(5) Inventory gains and losses due to maintenance, and assembly or disassembly of material.

b. Negative reports and asset status summary cards are not required for ATRs, since a running summary is maintained by NAVAMMOLOGCEN based on the initial activity report, containing the following:

(1) DoDIC/NALC of each item in stock.

(2) On hand last report.

(3) Quantity on board total.

(4) Quantity serviceable.

(5) Quantity unserviceable.

6.6.3.2 ATR Numbering. The initial ATR report is assigned "serial one." Individual transactions are numbered serially from the initial report (e.g., serial one, serial two, ... serial thirty-nine ... etc.). The serial numbers are used by NAVAMMOLOGCEN to compare and adjust the CAIMS inventory balances recorded for the activity and to detect missing reports. ATRs are submitted by message.

<u>Transaction</u>	<u>Document Identifier (Series)</u>
Transfers between purpose codes.	DAC and DAD
Receipt transactions based on procurement instrument source (e.g., commercial procurement, MIPR, receipt of material assembled based on a project order).	D4 Series
Receipt of transaction from other than procurement (e.g., return of material to inventory, receipts from other locations, receipts from non-Navy sources).	D6 Series
Issue transactions (e.g., to Navy, DoD, non-DoD activities, to foreign countries, to test and evaluation, to activities as government furnished material for production or loading, assembling and packing (LAP), to others).	D7 Series
Single adjustment transaction (e.g., changes or transfer of condition code or purpose code).	D8/D9 Series
Reidentification of stock (e.g., used for previously misidentified items or for changes and as a result of renovation).	D8/D9 Series and D6/D7 (renovation)
Reversals (e.g., cancellation of an adjustment transaction).	D8/D9 Series
For Further Transfer (FFT) (for material passing through NAVSEA ordnance stockpoints).	BGC
Items determined to be beyond economical repair and transferred to the property disposal officer.	DJ7
Negative transaction report.	BZA

Figure 6-6-1. TIR Document Identifier Codes

6.6.3.3 Report Contents.

a. Lines 1 through 6 of the transaction message contain the UIC and ACC of the reporting activity, the report serial number, the transaction date, and the number of transactions. (The ACC codes for use by CONUS ATR reporters are listed in NAVSUP P-724 (NOTAL); those for Fleet units are listed in applicable FLTCinC reporting instructions.) Dual UICs are required on all ATRs reporting the noncombat expenditure of ordnance. This requirement facilitates accurate accounting by NAVAMMOLOGCEN of noncombat ordnance expenditures, as compared to allocations, and distinguishes between supporting (reporting) and user activities. Two UICs are reported, even if the reporting UIC and the allocation UIC are the same. Noncombat expenditures include expenditures reportable in line 6 under columns F, G, H, and I.

b. Line 6 provides specific information on the type of transaction, type of material, quantity involved, on-hand assets, and other pertinent data. Line 6 contains ap-

plicable column headings A-N (columns A, O, L, and M are mandatory in all transaction messages; other columns need not be included on the message when they would reflect a zero quantity).

c. Line 7 of the message report is used for inclusion of appropriate narrative remarks. All gains by inventory are identified in this line in addition to being reported in Column C, and expenditures in Columns J and K are explained. Identify serial or lot numbers in this block.

d. Reconciliation Reports. ATR reconciliation reports are used by NAVAMMOLOGCEN to identify and correct data discrepancies between an activity's inventory records and the CAIMS database. Quarterly NAVAMMOLOGCEN forwards a transaction date review to each ATR reporting activity, listing items for which transactions have not been reported during the previous 180 days. If a transaction has occurred locally after the transaction date indicated on the NAVAMMOLOGCEN listing, the reporting activity submits an updated report.

CHAPTER 6.7
Stratification Process

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CHAPTER 6.7

Stratification Process

6.7.1 Stratification Process.

6.7.1.1 General. MPSs are initiated annually in February, primarily for the purpose of identifying end-item deficiencies to provide budget and program data in support of POM submissions. Items with sufficient assets through the FYDP period are not explored any further for magnitude of their long supply at this time. Since only a portion of the stratification process is used, this operation, performed by NAVAMMOLOGCEN, is commonly referred to as the acquisition requirements determination process. The full stratification process is initiated annually by NAVAMMOLOGCEN in August to determine whether assets will satisfy requirements and retention level objectives, and determine if potential excess stocks exist. The term "stratification" has become associated with this annual review, rather than the stratification process in general.

6.7.2 End-Item Stratification Process

6.7.2.1 Preliminary Stratification Sheets. NAVAMMOLOGCEN prepares preliminary stratification sheets by 1 August for each principal item, based on the current MPS and latest P-20 exhibits, and submits these to each cognizant PEO/PM. Preliminary sheets contain requirements and usage data elements. Certain principal items required for a particular mission have earlier modifications or older designs which are suitable substitutes. Acceptable items are grouped for stratification. Substitute items are listed in order of preference in the item identification line by DoDIC/NALC or NSN.

6.7.2.2 PEO/PM Preliminary Review. The PEO/PM reviews the preliminary data element submission, updating changes to requirement elements that have occurred since the preparation of MPSs and P-20s. Corrected data elements are returned to NAVAMMOLOGCEN by 20 September.

6.7.2.3 Preliminary Stratification Report. The corrected requirement data elements are entered into CAIMS, and together with asset data available in CAIMS, are used by NAVAMMOLOGCEN to prepare a preliminary stratification report for submission to the PEOs/PMs and CNO on 1 November. The following are essential features of the preliminary report.

- a. Worldwide assets are presented in separate quantities of serviceable and unserviceable assets.
- b. Serviceable assets consist of C/C A, B, C, and D items.
- c. Unserviceable assets consist of C/C E, F, G, J, K, L, M, and N items (H and P items are not included.)
- d. Assets of items with substitute items are combined for stratification.
- e. Assets are applied to the Approved Force Acquisition Objective (AFAO), Contingency Retention Stock (CRS), and Economic Retention Stock (ERS) in that order. Serviceable assets are applied until exhausted before the application of any unserviceable assets is made to the AFAO or retention stocks.

6.7.2.4 PEOs/PMs Report Review

- a. Each end item with an indicated Potential Excess (PE) is reviewed from a technical, tactical, and logistic standpoint to determine if any of the following conditions exist.
 - (1) There is a possible use for the item as a substitute for needed items.
 - (2) Modification of the item to types of items below AFAO, CRS, and ERS levels is feasible and economical.
 - (3) Adjustments to the ERS should be made based on QE projections or trends that deterioration rates will increase for this item thus resulting in a reduction in the quantity that should be declared as PE.
 - (4) Adjustments to PE quantities should be made when part of the unserviceable stock is required to offset AFAO, CRS, or ERS and the remainder is declared PE, since recovery rates of serviceables by conducting maintenance on unserviceable items vary.
 - (5) An item should be retained for breakdown and recovery of needed components or parts.

(6) For principal items with aggregated assets of substitute items, DoDIC, NALC, or NSN identification should be included in the PE. (A reverse order of preference may not be tactically, logistically, or economically desirable.)

6.7.2.5 Review Submittal. On completion of this review the PEOs/PMs will concur or comment, as appropriate, and sign each of their stratification sheets. All stratification of end items with a PE will be forwarded to CNO by 1 December.

6.7.3 Components and Supporting Items Stratification Process

6.7.3.1 General. CNO is concerned with the types and quantities of operationally complete rounds determined to be PE. These are items that are issued completely assembled and ready for use (such as missiles, fixed ammunition for guns, mines, pyrotechnics, or torpedoes). Also included are major items of issue for operational use such as projectiles and propelling charges of separated ammunition. The basic purpose of stratification is to determine the existence of ordnance in excess of authorized retention levels, so that needed storage can be released through disposal of such excesses. Navy ordnance activities also store quantities of nonstandard items (identified by locally-assigned stock numbers), subassemblies, primary components, ordnance details, minor components, and support items for production, maintenance, shipment and issue operations that are designed for specific ordnance end items. These also occupy needed storage space and must be stratified to identify excess items.

6.7.3.2 Stratification Control Number. The computer program for stratification of end items contains a provision for assigning a control number to each item. Components, subassemblies, and ordnance details are programmed to

relate to end items via control number association whenever possible. For nonstandard items with locally-assigned stock numbers and for components/ordnance details/support-items with universal relationships to end items, assets are listed with no known requirement or with a notional requirement equal to total assets respectively. The objective is to assure a 100 percent review of all items in CAIMS.

6.7.3.3 Component Stratification Report. NAVAMMOLOGCEN prepares and submits the component stratification report under separate cover at the same time as the end-item preliminary stratification report.

6.7.3.4 Report Review. The PEOs/PMs perform a review and analysis including research and identification of component items in the same manner as for end-item stratification. Direction for retention or classification as PE is provided directly to NAVAMMOLOGCEN.

6.7.4 DoD Screening

6.7.4.1 Review and Approval Meeting. When notified by NAVAMMOLOGCEN, the PEOs/PMs (or their designated representatives) participate in the review and approval meeting with CNO and ICP representatives.

6.7.4.2 Screening and Redistribution Process. Items approved as potentially in excess of USN requirements at this meeting are subjected to the DoD screening and redistribution process utilizing form DD 2359, Notification of Excess. IMs will certify that excess ordnance items have been screened through all channels.

6.7.4.3 Assets Identified for Disposal. Excess items not required within DoD, other government agencies, or for FMS, are designated for disposal by IMs, identifying quantity and location.

SECTION 7

Logistics Management Support

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CHAPTER 7.1

Explosives Safety Management**7.1.1 Explosives Safety Management**

7.1.1.1 General. The primary focus of explosives safety management is to minimize risk to personnel, facilities, and equipment throughout the life of the ordnance. Even though there are personnel specifically assigned to explosives safety management positions at all echelon levels, everyone working with or around ordnance should consider themselves responsible for explosives safety management, and identifying and minimizing risk. The purpose of the Explosives Safety Management Program is to specify standardized safety regulations for the research, development, production, maintenance, care, handling, storage, preparation for shipment, use, and disposal of non-nuclear ordnance items. The safety regulations are intended to control the hazards associated with these operations including, but not limited to, blast, fire, lightning, Hazards of Electromagnetic Radiation to Ordnance (HERO), and propagation.

7.1.1.2 Policy. The following is Navy policy, which is consistent with operational requirements.

a. Provide the maximum possible protection to personnel and property, both inside and outside an installation or unit, from the damaging effects of potential accidents involving ordnance and explosives.

b. Limit the exposure of a minimum number of persons, for a minimum time, to the minimum amount of ordnance and explosives consistent with safe and efficient operations.

c. Comply with ordnance and explosives safety standards established by the DDESB and as published by COMNAVSEASYS COM and CNO.

7.1.1.3 Scope. The naval explosives safety program applies to all personnel, civilian and military, assigned to any part of DoN where non-nuclear ordnance and explosives are, or may be, present.

7.1.1.4 Responsibilities

a. CNO exercises general supervision and command authority for the application of technical guidance prepared by Commander, NAVAMMOLOGCEN (N41). Within OPNAV, the Deputy Chief of Naval Operations (Logistics) (N4) is responsible for supervising Navy explosives safety matters. N4 coordinates explosives safety policy, programs and guidance which effect Navy and Marine Corps forces mutually, with the CMC.

b. NAVAMMOLOGCEN is assigned the PM responsibilities for the Navy's explosives safety program to include the following.

(1) Interpret DoD explosives safety policy contained in DoDD 6055.9 of 29 July 1996 (NOTAL).

(2) Establish Navy explosives safety ashore policy and procedures through NAVSEA OP 5 Vol 1.

(3) Establish Navy explosives safety afloat policy and procedures through NAVSEA OP 4.

(4) Establish Navy explosives safety ashore for Advanced Bases policy and procedures through NAVSEA OP 5 Vol 3.

(5) Establish additional explosives safety policies and procedures through additional instructions and publications as required.

(6) Manage the explosives facility site approval process for the Navy.

(7) Manage the Navy explosives safety inspection program, including the Ammunition and Hazardous Materials (AMHAZ) Review Board, and Explosive Safety Inspections (ESIs).

(8) Manage the Navy explosives waivers and deviations process.

(9) Control the Approval for Navy Use process of all new or modified ordnance items through the WSESRB.

c. Technical Center for Explosives Safety (TCES). TCES, located within the NSWC DIV Indian Head Safety

Department, provides program management support as tasked by NAVAMMOLOGCEN.

d. Packaging, Handling, Storage, and Transportation Department, NWS Earle. The PHS&T Department provides explosives safety program publication support to NAVAMMOLOGCEN. The PHS&T Department is responsible for placing the item's explosive data, along with the other item catalog data, into the SW020-AC-SAF-010 as stated in section 6-3 of this manual. Placement of the data in the SW volumes provides the explosives data to the production, maintenance, storage, and transportation managers, upon which they determine the required explosives safety measures for each item.

e. NAVAMMOLOGCEN Explosives Safety Support Offices (ESSOs). The ESSOs conduct ESIs of shore activities in accordance with NAVSEAINST 8020.14A (NOTAL), and afloat units in accordance with NAVSEA 8023.12 (NOTAL).

f. Ordnance Item PEO/PM. The PEO/PM is responsible for determining the hazard class/division of the item along with the other explosive characteristics not later than as part of the cataloging procedure described in section 6-3 of this manual.

g. Field Activities and Contractor Facilities. Each ordnance activity and facility shall have an Explosives Safety Officer, designated in writing, reporting directly to the Commanding Officer/Director. Ordnance activities and facilities are directly responsible for the safety of all ordnance in their custody and for the safety of all personnel, equipment, and facilities inside and outside the gate during the presence of ordnance at their activity or facility.

7.1.1.5 Organizational Relationships. The organizational relationships of the commands involved in explosives safety management are depicted in figure 7-1-1.

7.1.2 Joint Hazard Classification System (JHCS).

7.1.2.1 General. NAVSEAINST 8020.8 is the Joint-Service instruction for the Navy Explosives Hazard Classification Program, outlining program responsibilities and the interim and final hazard classification processes. Since 1992 the JHCS has been the authoritative source, within

DoD, for hazard classification of non-nuclear ordnance. The publication of the JHCS provides a single-source authoritative document for hazard classification data which takes precedence over conflicting information found elsewhere.

7.1.2.2 Description. The JHCS provides a means for ensuring the proper assignment of a Hazard Class Division (HC/D) code, a storage compatibility group, and accurate explosive weights for calculating appropriate separation distances. The assignment of these codes and explosive weights occurs before or as part of the cataloging process for new ordnance items. The data necessary for hazard classification is specified in the PM's checklist. The assignment of these codes and explosive weights can be based on either test results on the specific item being introduced, or on test results of other like items which already are or have been in the active inventory. Any changes to the item or packaging configuration requires that these codes and explosive weights be reviewed for required changes.

7.1.2.3 Responsibilities

a. The U.S. Army Defense Ammunition Center and School (USADACS), located at Savanna IL, is responsible for maintaining the database which contains the DoD JHCS data.

b. Each Military Department has a Hazard Classifier. The Hazard Classifier for DoN (Navy and Marine Corps ordnance) is located at NSWC DIV Indian Head, as identified in NAVSEAINST 8020.8A.

7.1.2.4 Hazard Classification Process.

a. NAVSEAINST 8020.8A provides the tests and tri-Service coordination process for hazard classification within DoD. The objective is to be in compliance with Federal Regulations for the safe transport of hazardous materials as published in Title 49, Code of Federal Regulations and SW020-AC-SAF-010; and to be in compliance with Navy requirements for the safe storage of ordnance as published in NAVSEA OP 5. Both Title 49, Code of Federal Regulations and SW020-AC-SAF-010 make provisions for interim hazard classification during item development and for final hazard classification once the item configuration and packaging is finalized.

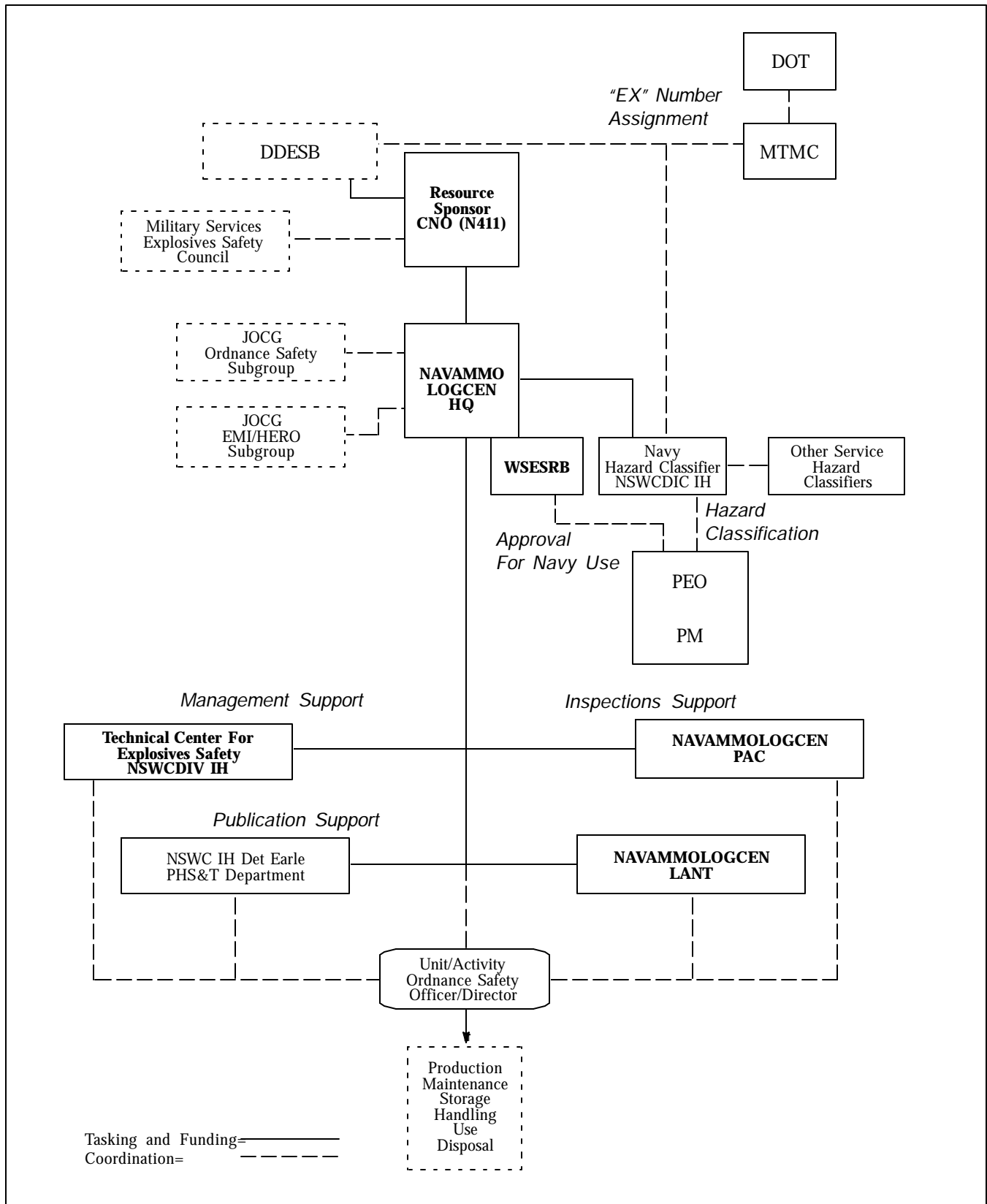


Figure 7-1-1. Explosives Safety Management Organizational Relationships.

b. **Interim Hazard Classification.** An interim hazard classification is normally used during the development cycle of an ordnance item to permit shipment; however, it can be used in othersituations. It is assigned by the appropriate Hazard Classifier, and must be requested in writing and supported by test data. A copy of the interim hazard classification must accompany any shipments of the item over public roadways.

c. **Final Hazard Classification.** Once the PEO/PM submits the cataloging request form to NAVAMMOLOG-CEN Mechanicsburg Pa. and the hazard classification data to the Hazard Classifier, the process to obtain a final hazard classification begins. The Hazard Classifier will review the data and assign a hazard classification, UN number, proper shipping name, and storage NEW. This information will be forwarded to USADACS (Army Hazard Classifier), the Air Force Safety Agency (Air Force Hazard Classifier), and DDESB for approval. When approved, the information is forwarded to DOT, via MTMC for assignment of an EX registration number. DOT forwards a copy of the letter assigning the EX number to USADACS who enters the item into the JHCS database. The JHCS database only contains ordnance items which have received final hazard classification. USADACS forwards the EX numbers to the other Service Hazard Classifiers. The Navy Hazard Classifier enters the data into CAIMS. Once the item has been assigned an EX number, the item can be shipped by commercial conveyance.

d. All validated explosives safety data (HC/D, NEW, EX number, etc.) is then available in the FLIS catalog database for other Service users, in the CAIMS catalog database for access by CAIMS users, and in the SW020-AC-SAF-010/020/030 publications for all Fleet unit, field activity, and contractor facility users.

7.1.2.5 JHCS Database. The JHCS database is designed to allow field activities to easily retrieve the latest explosive hazard classification data. The system is managed on behalf of the DDESB by the U.S. Army Defense Ammunition Center and School's Technical Center for Explosives Safety (USATCES). Any authorized user with an assigned password can access the system using an IBM-compatible computer with a modem. Dumb or smart terminals of various manufacturers can be utilized in VT100 mode, or emulation thereof, to communicate with the JHCS database on a read-only basis. The link can be made through telenet or via telephone dial-up using DSN or commercial telephone lines. To initiate the procedure for becoming an authorized user and obtaining a password, contact USATCES at DSN 585-8745, or by sending an e-mail to "jhcs@savanna-emh1.army.mil". The database contains 27 data elements for each ordnance item. The query capa-

bilities of the system allow you to request information in any of the following formats:

- a. List JHCS data by NSN.
- b. List JHCS data by DoDIC.
- c. List JHCS data by Part/Drawing Number.
- d. List JHCS data by Nomenclature.
- e. Perform Query Form.

7.1.3 UNO Hazard Classification System. DoD uses the UNO classification system to identify the hazard characteristics of non-nuclear ordnance and explosives. These hazard characteristics are the focal point around which the safety standards have been established.

7.1.3.1 UNO Classes. The UNO classification system contains nine hazard classes. Class 1 and Class 6, apply to non-nuclear ordnance and explosives. Class 1 consists of ordnance and explosives, and blasting agents. Class 6 consists of poisonous substances (Poison B), irritating materials, and disease or infectious etiological agents. If the ordnance item to be classified contains a hazardous material such as: fuel, oxidizer, or compressed gas which presents a greater hazard in transportation than the Class 1 material, then the protocol for the predominant hazard should be used rather than that for Class 1 materials.

7.1.3.2 Class/Divisions. Hazard classes are further divided into divisions that indicate the primary characteristics and associated hazards. The UNO Class/Divisions are identified and defined in depth in NAVSEA OP 5 Vol 1. The predominant Class/Divisions used for non-nuclear ordnance are as follows.

- a. Class 1 Division 1. Mass detonating.
- b. Class 1 Division 2. Non-mass detonating, fragment producing.
- c. Class 1 Division 3. Mass fire, minor blast or fragment.
- d. Class 1 Division 4. Moderate fire, no blast.
- e. Class 1 Division 5. Very insensitive substance (with a mass explosion hazard).
- f. Class 1 Division 6. Extremely insensitive item.
- g. Class 6 Division 1. Poisonous materials.

- h. Class 6 Division 2. Infectious substances.

7.1.3.3 Storage Compatibility Groups (SCGs). The following SCGs are based on the UN system and are the reference for all the storage compatibility charts used in managing non-nuclear ordnance.

- a. Group A. Primary explosive substance. Examples are wet lead azide, wet lead styphnate, wet mercury fulminate, and wet tetracene; dry RDX and dry PETN.

- b. Group B. Articles containing a primary explosive substance and not containing two or more effective protective features. Examples are detonators, blasting caps, small arms primers, and fuzes without two or more safing features.

- c. Group C. Propellant explosive substances or other deflagrating explosive substances or articles containing such explosive substances. Examples are single-, double-, triple-based, and composite propellants, rocket motors (solid propellant), and ammunition with inert projectiles.

- d. Group D. Secondary detonating explosive substances or black powder or articles containing a secondary detonating explosive substance, in each case without means of initiation and without a propelling charge, or articles containing a primary explosive substance and containing two or more effective protective features.

- e. Group E. Articles containing a secondary detonating explosive substance, without means of initiation, with a propelling charge (other than one containing flammable liquid or hypergolic liquid). Examples are artillery ammunition, rockets, or guided missiles.

- f. Group F. Articles containing a secondary detonating explosive substance with its own means of initiation, with a propelling charge (other than one containing flammable liquid or hypergolic liquid) or without a propelling charge. Examples are items initiated by means of a bouchon firing device, grenades, sounding devices, and similar items having an in-line explosive train in the initiator.

- g. Group G. Pyrotechnic substances or articles containing a pyrotechnic substance, or articles containing both an explosive substance and an illuminating, incendiary, tear-producing, or smoke producing substance (other than a water-activated article or one containing white phosphorus, phosphide or flammable liquid or gel or hypergolic liquid). Examples are flares, signals, incendiary or illuminating ammunition, and other smoke or tear producing devices.

- h. Group H. Articles containing both an explosive substance and white phosphorus. Example are WP, PEP, or other ordnance containing pyrophoric material.

- i. Group J. Articles containing both an explosive substance and flammable liquid or gel. Examples are liquid or gel filled incendiary ordnance, FAE device, and flammable fueled missiles.

- j. Group K. Articles containing both an explosive substance and a toxic chemical agent. Examples are artillery or mortar ammunition, fuzed or unfuzed, grenades, rockets or bombs filled with a lethal or incapacitating chemical agent.

- k. Group L. Explosive substance or articles containing an explosive substance and presenting a special risk (e.g., due to water activation or presence of hypergolic liquids, phosphides or pyrophoric substances) needing isolation of each type. Examples are water-activated devices, prepackaged hypergolic liquid-fueled rocket engines, TPA (thickened TEA), and damaged or suspect ordnance of any group.

- l. Group N. Articles containing only Extremely Insensitive-Detonating Substances (EIDS). Examples are bombs and warheads.

- m. Group S. Substances or articles so packed or designed that any hazardous effects arising from accidental functioning are limited to the extent that they do not significantly hinder or prohibit firefighting or other emergency response efforts in the immediate vicinity of the package. Examples are thermal batteries, explosive switches or valves, and other ordnance items packaged to meet the criteria of this group.

7.1.4 Acquisition Explosives Safety

7.1.4.1 Research. Explosives safety begins in the research environment during item development. NAVSEA OP 5 Vol 1 covers the explosives safety regulations as they pertain to RDT&E activities.

7.1.4.2 Weapon System Explosives Safety Review Board. The WSESRB is designated by the CNO to review safety aspects of non-nuclear ordnance and to make recommendations to the responsible naval command or PEO/PM. All newly introduced Navy ordnance items will be reviewed by the WSESRB to assure that safety requirements are met. No ordnance acquisition program, will proceed to AFP without WSESRB safety approval or certification as stated in NAVSEAINST 8020.6 (NOTAL).

7.1.4.3 Production. Production explosives safety issues are specifically addressed in NAVSEA OP 5 Vol 1 chapter 9. This includes SOPs used in production operations which are regulated by NAVSEAINST 8023.11 (NOTAL). The NAVSEA instruction defines the processes requiring an SOP and the general contents and outline of an acceptable SOP.

7.1.5 Maintenance Explosives Safety. Maintenance explosives safety issues are the same as for production. The regulations identified in subparagraph 7.1.4.3. also apply specifically to maintenance processes.

7.1.6 Explosives Safety Ashore

7.1.6.1 Regulation. The safe research, development, production, maintenance, care, handling, storage, use, and disposal of non-nuclear ordnance items at Navy and Marine Corps shore activities, regardless of ordnance and explosives ownership, is under the cognizance of NAVAMMOLOGCEN as delegated by NAVSEASYSKOM. Ordnance processes shall conform to the regulations stated in NAVSEA OP 5 Vol 1, as well as the safety standards issued by the DON and applicable federal, state, and local regulations that are not in conflict with those of COMNAVSEASYSKOM. NAVSEA OP 5 Vol 1 organizes the ordnance and explosives regulations into three subsections: general regulations, specific regulations, and inspection and surveillance policies.

7.1.6.2 Storage Compatibility. Different types of ordnance stored in magazines ashore can only be stored in the

same magazine if authorized by the storage compatibility chart contained in NAVSEA SW020-AC-SAF-010 (NOTAL) reproduced in figure 7-1-2.

7.1.7 Explosives Safety Afloat

7.1.7.1 Regulation. The detailed specifications and blueprints for construction of Navy ships designate the only authorized ordnance and explosives spaces or magazines for each ship type and class. The explosives safety requirements for ordnance aboard all Navy ships is found in NAVSEA OP 4. The commanding officer of a commissioned Navy ship or other craft that is at a pier or wharf that forms part of a naval shore activity or is in waters adjacent to a naval shore activity as defined by local regulations has direct responsibility for compliance with all ship and station safety regulations that concern ordnance and explosives within the ship in conformance with orders of the commanding officer of the naval shore activity concerned. The Quantity-Distance standards contained in NAVSEA OP 5 Vol 1 for piers, wharfs, and anchorage facilities apply to ships with cargo ordnance stowed aboard, and to all ships during loading, offloading, stowage, or shifting of ordnance. Navy combatant ships and tenders must comply with the standards set forth in OPNAVINST 8020.14 (NOTAL) while berthed at U.S. Naval Stations and similar support activities.

7.1.7.2 Stowage Compatibility. Ordnance can only be stowed together in the same magazine if authorized by the appropriate stowage compatibility chart contained in NAVSEA OP 4. The Stowage Compatibility Chart for Combatant Ships is reproduced in figure 7-1-3. Detailed compatibility charts for stowage of ordnance aboard other types of naval vessels are also contained in NAVSEA OP 4. Stowage compatibility of military ordnance aboard commercial vessels shall be as described in 49 CFR 176.83(c) and (f).

7.1.8 Explosives Safety Ashore, Advanced Bases

7.1.8.1 Regulation. The explosives safety requirements for designated overseas ordnance activities is found in NAVSEA OP 5 Vol 3. In addition to these requirements, overseas activities must also comply with all host country regulations which are more restrictive than the requirements in NAVSEA OP 5 Vol 3.

Groups	A	B	C	D	E	F	G	H	J	K	L	N	S
A	X	Z											
B	Z	X	Z	Z	Z	Z	Z					Z	X
C		Z	X	X	X	Z	Z					Z	X
D		Z	X	X	X	Z	Z					Z	X
E		Z	X	X	X	Z	Z					Z	X
F		Z	Z	Z	Z	X	Z					Z	X
G		Z	Z	Z	Z	Z	X					Z	X
H								X					X
J									X				X
K										Z			
L													
N		Z	Z	Z	Z	Z	Z					X	X
S		X	X	X	X	X	X	X	X			X	X

NOTES:

1. The marking "X" at an intersection of the above chart indicates that these groups may be combined in storage. Otherwise, mixing is either prohibited or restricted per note 2 below.

2. The marking "Z" at an intersection of the above chart indicates that, when warranted by operational considerations or magazine nonavailability, and when safety is not sacrificed, logical mixed storage of limited quantities of some items of different groups may be approved by NAVAMMOLOGCEN. Approval is not to be considered a waiver. Combinations that violate the principles of paragraph 2.2.4 require justification by waiver or exemption. Examples of acceptable combinations of class 1 are:

a. Division 1, group A initiating explosives with division 1, group B fuzes not containing two or more independent safety features.

b. Division 3, group C bulk propellants or bagged propelling charges with division 3, group G pyrotechnics without their own means of initiation.

3. Equal numbers of separately packaged components of complete rounds of any single type of ammunition may be stored together. When so stored, compatibility is that of the assembled round; i.e., WP filler in group H, HE filler in groups D, E, or F, as appropriate.

4. Ammunition designated "practice" by NSN and nomenclature may be stored with the fully loaded ammunition it simulates.

5. Mixing of compatibility groups {except items in groups A, K, L and N} in limited quantities is authorized by NAVAMMOLOGCEN. Such mixed storage is not to exceed a total of 1,000 pounds NEW and will be considered as the highest hazard division included.

6. Group K requires not only separate storage from other groups, but may also require separate storage within the group. NAVAMMOLOGCEN shall determine which items in group K may be stored together and those which must be stored separately.

7. Ammunition items without explosives which contain substances properly belonging to another hazard class may be assigned to the same compatibility group as items containing explosives and the same substance, and be stored with them.

8. For purposes of mixing, all items must be packaged in approved storage containers. Items shall not be unpackaged at storage locations.

9. Articles of compatibility group B and F shall each be segregated in storage from articles of other compatibility groups by means which are effective in the prevention of propagation to those articles.

10. When ammunition or ammunition components are assigned to hazard classes 2 through 9, they may be stored in accordance with the compatibility group assigned. Quantity-distance requirements are in accordance with the item being stored.

11. If dissimilar hazard Class/Division 1.6, group N munitions, such as Mk 82 and Mk 84 GP Bombs, are mixed together and have not been tested to assure non-propagation, the mixed munitions are to be considered hazard Class/Division 1.2, group D for purposes of transportation and storage.

Figure 7-1-2. Storage Compatibility Chart.

Groups	A	B	C	D	E	F	G	H	J	K	L	N	S
A	1												
B		X											X
C			X	X	X		6		5			X	X
D			X	X	X		6		5			X	X
E			X	X	X		6		5			X	X
F						X							X
G			6	6	6		6					6	X
H								X					X
J			5	5	5				X		4	5	X
K										X			
L									4		X		
N			X	X	X		6		5			X	X
S		X	X	X	X	X	X	X	X			X	X

NOTES: (An "X" indicates permissible stowage. A number refers to a numbered note restricting stowage. A blank space indicates prohibited Stowage.)

1. Compatibility Group A is prohibited aboard combatant ships.
2. Hazard Class/Division 1.4 items of any Compatibility Group or combination of Compatibility Groups may be stowed in any magazine spaces except those primarily designated for Compatibility Groups K or L. For example, 1.4C and 1.4D items may be stowed in a Compatibility Group H space. This note applies to all permissible combinations of the compatibility chart.
3. Items assigned to Hazard Classes 2 through 9 for transportation purposes and a Storage Compatibility Group for storage may be stowed as Hazard Class/Division 1.4. For example, an item assigned a classification of 9S may be stowed as 1.4S and Note 2 applies. This note applies to all permissible combinations of the compatibility chart.
4. FAE weapons and Target Drone AQM-37A are compatible in stowage. FAE weapons require less stringent certified fuel facilities, and can be stowed in hypergolic magazines, but hypergolic fueled items cannot be stowed in magazines certified for FAE weapons only. FAE weapons and Target Drone AQM-37A must be stowed in a certified magazine in accordance with NAVSEA S9000-AB-GTP-010.
5. Compatibility Group J missile systems or rocket motors only. Compatibility Group J drones, incendiaries, napalm and FAE weapons are prohibited except as provided for in note 4.
6. Commercial Fireworks are forbidden aboard naval vessels. Thermite (TH) ammunition shall be stowed in topside jettisonable lockers or other ready service locker overhanging the ship where direct burn-through will impact the water. When these lockers are not available, AW ships may stow thermite filled ammunition in the lowest magazine provided they are stowed in their original shipping containers in a separate stack or stowed on the bottom of a stack of other ammunition.
7. Chemical ammunition in different stowage compatibility groups shall be stowed in separate CWF magazines. This note applies to all permissible combinations of the compatibility chart.

Figure 7-1-3. Stowage Compatibility Chart for Combatant Ships.

7.1.8.2 Storage Compatibility. Ordnance stored in magazines ashore overseas at advanced bases can only be stored together in the same magazine if authorized by the appropriate storage compatibility chart contained in NAVSEA OP 5 Vol 3 which is reproduced in figure 7-1-4.

7.1.9 Transportation Explosives Safety.

7.1.9.1 Regulations. Safety regulations and requirements for shore station operations involving inspection, loading, unloading, and on station transportation of

ordnance and explosives are found in NAVSEA OP 5 Vol 1. Requirements for in-transit shipments of ordnance and explosives are found in Public Law, DOT regulations, SW020-AC-SAF-010, and Military Sealift Command (MSC) regulations.

7.1.9.2 Transportation Compatibility. Ordnance can only be stored together in the same transport vehicle if authorized by the storage compatibility chart contained in SW020-AC-SAF-010 which is reproduced see figure 7-1-5.

Groups	A	B	C	D	E	F	G	H	J	K	L	N	S
A	X	X											
B	X	X	X	X	X	X	X						X
C		X	X	X	X	X	X					X	X
D		X	X	X	X	X	X					X	X
E		X	X	X	X	X	X					X	X
F		X	X	X	X	X	X						X
G		X	X	X	X	X	X						X
H								X					
J									X				
K										X			
L													
N			X	X	X							X	X
S		X	X	X	X	X	X	X	X			X	X
NOTE: Where intersections are marked an "X", items are compatible and may be stored together.													

Figure 7-1-4. Storage Compatibility for Advanced Bases.

Groups	A	B	C	D	E	F	G	H	J	K	L	N	S
A		X	X	X	X	X	X	X	X	X	X	X	X
B	X		X	X	X	X	X	X	X	X	X	X	4/5
C	X	X		X	X	X	X	X	X	X	X	3	4/5
D	X	4	2		2	X	X	X	X	X	X	3	4/5
E	X	X	2	2		X	X	X	X	X	X	3	4/5
F	X	X	X	X	X		X	X	X	X	X	X	4/5
G	X	X	X	X	X	X		X	X	X	X	X	4/5
H	X	X	X	X	X	X	X		X	X	X	X	4/5
J	X	X	X	X	X	X	X	X		X	X	X	4/5
K	X	X	X	X	X	X	X	X	X		X	X	4/5
L	X	X	X	X	X	X	X	X	X	X	1	X	X
N	X	X	3	3	3	X	X	X	X	X	X		4/5
S	X	4/5	4/5	4/5	4/5	4/5	4/5	4/5	4/5	4/5	X	4/5	

NOTES:

1. A blank space in the Table indicates that no restrictions apply.
2. The letter "X" in the Table indicates that explosives of different compatibility groups may not be carried on the same transport vehicle.
3. The numbers in the Table mean the following:
 4. "1" means an explosive from Compatibility Group L shall only be carried on the same transport vehicle with an identical explosive.
 5. "2" means any combination of explosives Compatibility Groups C, D, or E is assigned to Compatibility Group E.
 6. "3" means any combination of explosives from Compatibility Groups C, D or E with those in Compatibility Group N is assigned to Compatibility Group D.
 7. "4" means CRF Title 49 chapter 177.835(g) applies when transporting detonators.
 8. "5" means Division 1.4S fireworks may not be loaded on the same transport vehicle with Division 1.1 or 1.2 (Class A explosive) materials.
9. Except as provided in note 4 of this figure, explosives of the same Compatibility Group but different Divisions may be transported together provided that the whole shipment is transported as through its entire contents were of the lower numerical Division (i.e. Division 1.1 being lower than Division 1.2). For example, a mixed shipment of Division 1.2 (Class A explosive) materials and Division 1.4 (Class C explosive) materials, both of Compatibility Group D, must be transported as Division 1.2 (Class A explosive) materials.
10. When Division 1.5 (blasting agent) materials, Compatibility Group D, are transported in the same freight container as Division 1.2 (Class A explosive) materials, Compatibility Group D, the shipment must be transported as Division 1.1 (Class A explosive) materials, Compatibility Group D.

Figure 7-1-5. Transportation Compatibility Table for Class 1 (Explosive) Materials.

CHAPTER 7.2

Physical Security Management

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CHAPTER 7.2

Physical Security Management

7.2.1 Physical Security Management

7.2.1.1 General. Standards and criteria have been established for the physical security of DoD sensitive conventional AA&E. These standards and criteria are intended to protect against loss or theft of AA&E at DoD activities and DoD contractor facilities. They apply to non-nuclear ordnance items during production, maintenance, storage, and transportation. Specific guidance on the physical security of AA&E is found in OPNAVINST 5530.13B.

7.2.1.2 Perspective. The primary focus of physical security management is to minimize the risk of ordnance technology compromise, intentional damage, and theft. Even though there are personnel specifically assigned to physical security management positions at all echelon levels, everyone working with or around ordnance should consider themselves responsible for physical security, and identifying and minimizing risk.

7.2.1.3 Organizational Relationships. The organizational relationships of the commands whose major function is physical security management are depicted in figure 7-2-1.

7.2.1.4 Responsibilities

a. The CNO exercises general supervision and command authority for the AA&E physical security program in the Navy. Within OPNAV, the Special Assistant for Naval Investigative Matters and Security (N09N) is responsible for supervising Navy physical security matters, and coordinates physical security policy, programs, and guidance which effect Navy and Marine Corps forces mutually with the CMC.

b. NAVAMMOLOGCEN is assigned as the PM for the Navy's AA&E physical security and ordnance transportation security programs and is tasked by the CNO to perform the following.

(1) Evaluate the Navy AA&E physical security posture and develop cost effective upgrades.

(2) Budget and program for all AA&E physical security program funding, except for electronic security

systems, and provide CNO (N09N1) with Navy-wide resource requirements and related 6-year plans.

(3) Centrally manage, analyze, and maintain Navy statistical data on AA&E physical security matters and monitor AA&E physical security program objectives to ensure compliance with policies and standards.

(4) Manage the Navy AA&E security waivers and exceptions process.

(5) Implement Navy policy and guidance for the Ordnance Inventory Accuracy Management Program.

(6) Act as DoD executive agent for the Joint Service Defense Transportation Tracking System (DTTS).

c. Space and Naval Warfare Systems Center is assigned the following responsibilities for the Navy's AA&E Electronic Security Systems (ESS).

(1) In response to CNO (N09N) tasking, provide management, engineering, and technical support for ESS installations at AA&E sites.

(2) Determine the specific design requirements necessary for implementing CNO criteria and directives for ESS at designated AA&E sites.

(3) Prepare AA&E ESS equipment acquisition, budgeting, integrated logistic support, and installation plans.

(4) Serve as approval authority for ESS designs.

d. NSWCDIV Crane provides program support including the following.

(1) Issue, repair, and replace cylinders, locks, and keys for high and medium security locks.

(2) Receive copies of all submitted AA&E MLSR reports and maintain an AA&E MLSR database.

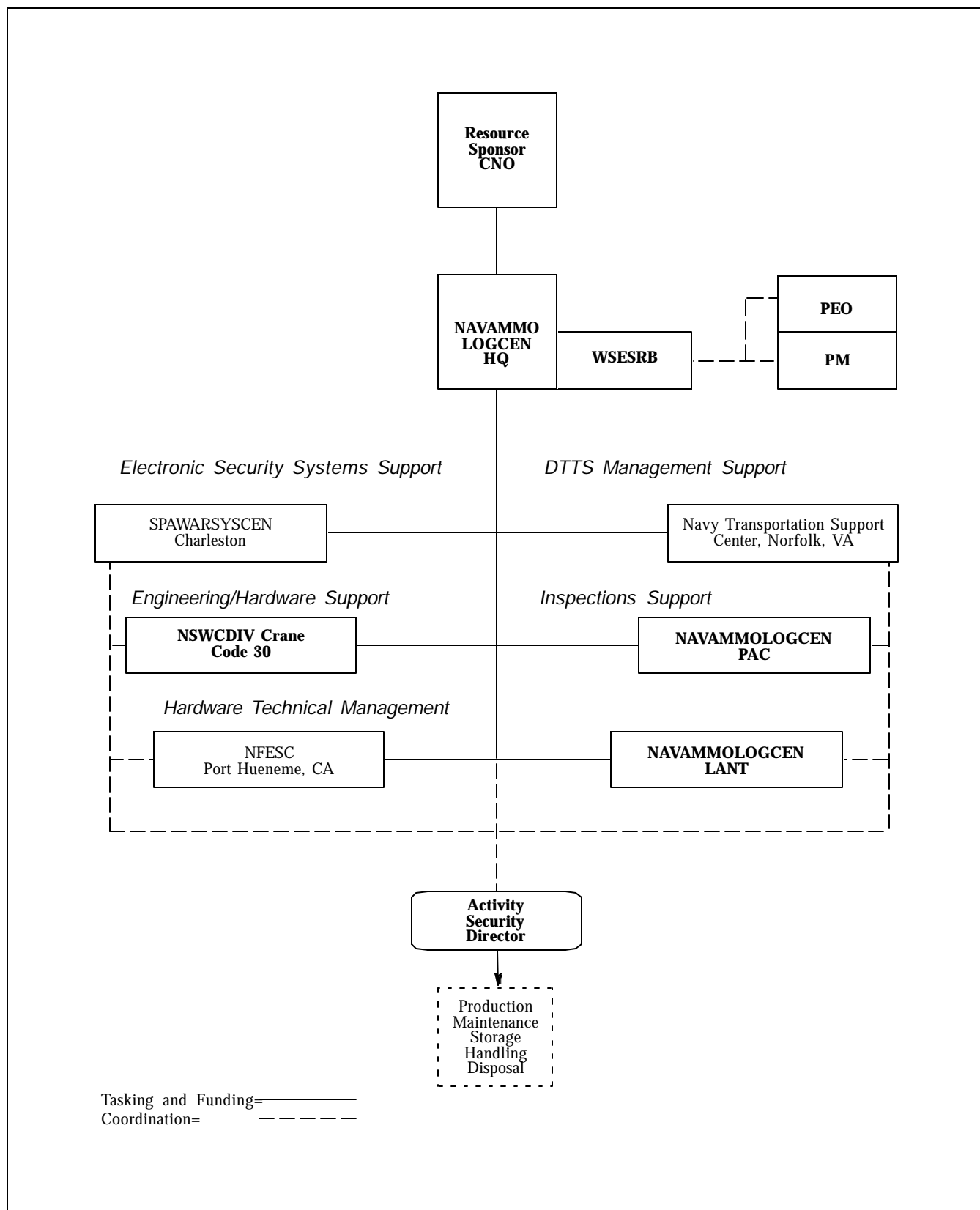


Figure 7-2-1. Physical Security Management Organizational Relationships.

(3) Provide quarterly reports, including trend analysis of all current AA&E data, to NAVCRIMINVES-ERV, with copy to FLTCinCs, and CMC (POS-10), as appropriate.

e. Naval Facilities Engineering Services Center (NFESC), as the Technical Manager for DoD lock, safe, vault, seal, and container programs, provides program support in these areas.

f. Explosives Safety Support Offices. The ESSOs include physical security issues in their explosives safety program inspections of shore activities and afloat units in support of NAVAMMOLOGCEN.

g. The ordnance item PEO/PM is responsible for determining the security risk category of the specific item as part of the item cataloging procedure described in section 6-3. The security risk category is assigned in accordance with procedures found in DoDINST 5100.76-M. This is accomplished by using a Decision Logic Table that results in a given item amassing a numerical value which relates to a risk category code.

h. PHS&T Department, NWS Earle. The PHS&T Department is responsible for placing the item security code, along with the other item catalog data, into the NAVSEA SW020-AC-SAF-010/020/030 as stated in section 6-3. Placement of the data in the SW volumes provides the security classification code to the production, maintenance, storage, and transportation managers so they know what security measures are required for the item.

i. Navy Transportation Support Center. (NAVTRANSSUPPCEN) is responsible to NAVAMMOLOGCEN for management and maintenance of DTTS.

j. Field Activities and Contractor Facilities.

(1) Assign an AA&E Security Officer in writing, reporting directly to the Commanding Officer/Director.

(2) Responsible for the security of all ordnance in their custody.

(3) Appoint in writing a key and lock custodian, whose duties include assuring proper custody and handling of AA&E keys and locks.

(4) Ensure an AA&E security survey is conducted at least every 12 months, and maintain records of the three most recent surveys for external review.

(5) Promptly submit appropriate information relating to theft or suspected theft of AA&E to the local NCIS office in accordance with SECNAVINST 5500.29B (NOTAL).

(6) Ensure submission of an MLSR report in accordance with SECNAVINST 5500.29B (NOTAL) for reportable AA&E stolen, lost, unaccounted for, or recovered; this includes gains or losses due to inventory adjustments.

7.2.2 Physical Security Risk Categories. The assignment of security risk category codes to non-nuclear ordnance and explosives is specifically designed to afford the item(s) an identified level of protection for storage, transportation, and accountability purposes. Figure 7-2-2 is a brief explanation of the AA&E security risk categories for description purposes only. Strict compliance with DoDINST 5100.76-M is required in assigning a security risk category to an ordnance item.

7.2.3 Defense Transportation Tracking System

7.2.3.1 Purpose. DTTS was implemented to enhance the safety, security, and intransit visibility of all DoD AA&E and other sensitive cargo while intransit using near-real time capability to track, monitor and expedite shipments by commercial motor and rail carriers within CONUS.

7.2.3.2 System Description. DTTS is an automated data processing-based system designed to track and monitor shipments in CONUS from consignor to consignee with increased surveillance and security while in transit. DTTS uses two-way digital communications and computer technology with commercial vehicles. There are four segments to DTTS.

a. Data Entry Call-In. NAVTRANSSUPPCEN receives calls from field activities (both consignors and consignees) and enters data into the DTTS computer. Shipment information is maintained and updated at all times, until finalized into the historical record database.

b. Computer Dial-In. Larger shipping activities directly input shipment and delivery information into the DTTS computer via personal computers. This dial-in feature provides automated customers the capability to directly access data pertaining to a specific shipment. NAVTRANSSUPPCEN also provides the automated sites with various daily management reports, which saves time and enhances system efficiency.

SRC	DEFINITION
1	HIGHEST SENSITIVITY (CATEGORY I). Non-nuclear missiles and rockets in a ready-to-fire configuration (e.g., HAMLET, REDEYE, STINGER, DRAGON, LAW, VIPER) and explosive rounds for non-nuclear missile and rockets. This category also applies in situations where the launcher (tube) and the explosive rounds, though not in a ready-to-fire configuration, are jointly stored or transported.
2	HIGH SENSITIVITY (CATEGORY II). Arms, Ammunition, and Explosives.
3	MODERATE SENSITIVITY (CATEGORY III). Arms, Ammunition, and Explosives.
4	LOW SENSITIVITY (CATEGORY IV). Arms, Ammunition, and Explosives.
5	HIGHEST SENSITIVITY (CATEGORY I). Arms, Ammunition, and Explosives with a physical security classification of SECRET (see note 1).
6	HIGHEST SENSITIVITY (CATEGORY I). Arms, Ammunition, and Explosives with a physical security classification of CONFIDENTIAL (see note 1).
7	UNCONTROLLED/UNCLASSIFIED. Items coded "7", UNCONTROLLED/UNCLASSIFIED, require normal storage accountability, physical inventory controls as is appropriate for any Department of the Navy property and <u>demilitarization</u> prior to disposal.
8	HIGH SENSITIVITY (CATEGORY II). Arms, Ammunition, and Explosives with a physical security classification of CONFIDENTIAL (see note 1).
S	SECRET. Items coded "S", SECRET, will be shipped as required by DOD Directive 5200.1R which is incorporated in OPNAVINST 5510.1. All other security protection during the life cycle shall be in accordance with the standards specified for Category II items.
C	CONFIDENTIAL. Items coded "C", CONFIDENTIAL, will be shipped and protected during the life cycle the same as for Category III items. An exception is the REDEYE man portable missile system which shall be shipped and protected as a Category I item.
U	UNCONTROLLED/UNCLASSIFIED. Items coded "U", Uncontrolled/Unclassified, require normal storage accountability and physical inventory controls as is appropriate for any Department of the Navy property.
P	PILFERABLE. Items coded "P", Pilferable, Include ammunition and explosives that are easily concealed, especially subject to theft, and desirable for personal use or sale for profit.

Note:

1. Items coded 5, 6, or 8 will be stored and transported in accordance with the provisions of DoD 5100.76M or DoD 5200.1R, "Information Security Program", whichever is more stringent.

Figure 7-2-2. Security Risk Codes (SRCs).

c. Transceiver Enabling. Carrier personnel enable the satellite transceiver prior to departure from the shipping activity.

d. Satellite Tracking. Position and other coded/text messages transmitted from the conveyance are processed

through the satellite-link and directed to a DTTS data repository located at the satellite technology's earth station. The DTTS computer automatically retrieves all data resident in the repository every 15 minutes, with the exception that any emergency message sent from a conveyance is immediately "pushed" to DTTS.

CHAPTER 7.3

Transportation Management

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CHAPTER 7.3

Transportation Management

7.3.1 Transportation Management.

7.3.1.1 General. Navy and Marine Corps traffic managers, both military and civilian, have regulations and procedures governing the safe handling and transportation of non-nuclear ordnance, explosives, and other hazardous material.

7.3.1.2 Perspective. The primary focus of transportation management is to manage transportation of military ordnance in accordance with transportation, explosives safety, and physical security regulations.

7.3.1.3 Responsibilities.

a. The CNO exercises general supervision and command authority for the application of technical guidance prepared by the Commander, NAVSUPSYSCOM and the Commander, NAVAMMOLOGCEN. Within OPNAV the Deputy Chief of Naval Operations (Logistics) (N4) is responsible for supervising Navy ordnance transportation matters, and coordinates ordnance transportation policy, programs and guidance which effects Navy and Marine Corps forces mutually with the CMC.

b. NAVAMMOLOGCEN is assigned the following PM responsibilities for the Navy's ordnance transportation program.

(1) Implement Navy policy and guidance for ordnance transportation safety.

(2) Implement Navy policy and guidance for ordnance transportation security.

c. The Traffic Management office responsibilities apply to all modes of transportation. Traffic Management Offices responsible for transportation of non-nuclear ordnance are responsible for the following.

(1) Preparation of transportation documentation.

(2) Scheduling commercial transportation for ordnance shipment.

(3) Verifying proper ordnance packaging, and marking and labeling.

(4) Inspection of commercial railcars and motor vehicles used for ordnance shipments.

d. Ordnance Certifiers. Personnel who certify ordnance, explosives and HM must be qualified and certified, in writing, by their commanding officer.

7.3.1.4 Organizational Relationships. The relationships of the commands/offices whose major function is ordnance transportation management are identified in figure 7-3-1.

7.3.2 Requirements.

7.3.2.1 Explosives Safety. Requirements for explosives safety during transportation are found in section 7-1 and SW020-AC-SAF-010.

7.3.2.2 Physical Security. Transportation security standards and procedures used in safeguarding categorized ordnance and explosives are found in OPNAVINSTs 5530.13B and 5530.14B, and SW020-AC-SAF-010.

There are standards established for the transportation of ordnance as well as specific considerations for small quantity shipments, movement by commercial carriers, and FMS shipments. There are also procedures defined for using DoD Constant Surveillance Service (DoD CS), Satellite Motor surveillance service (SM), and dual driver protective service. OPNAVINST 5530.13B includes a table which provides detailed security guidelines by category and mode of transportation.

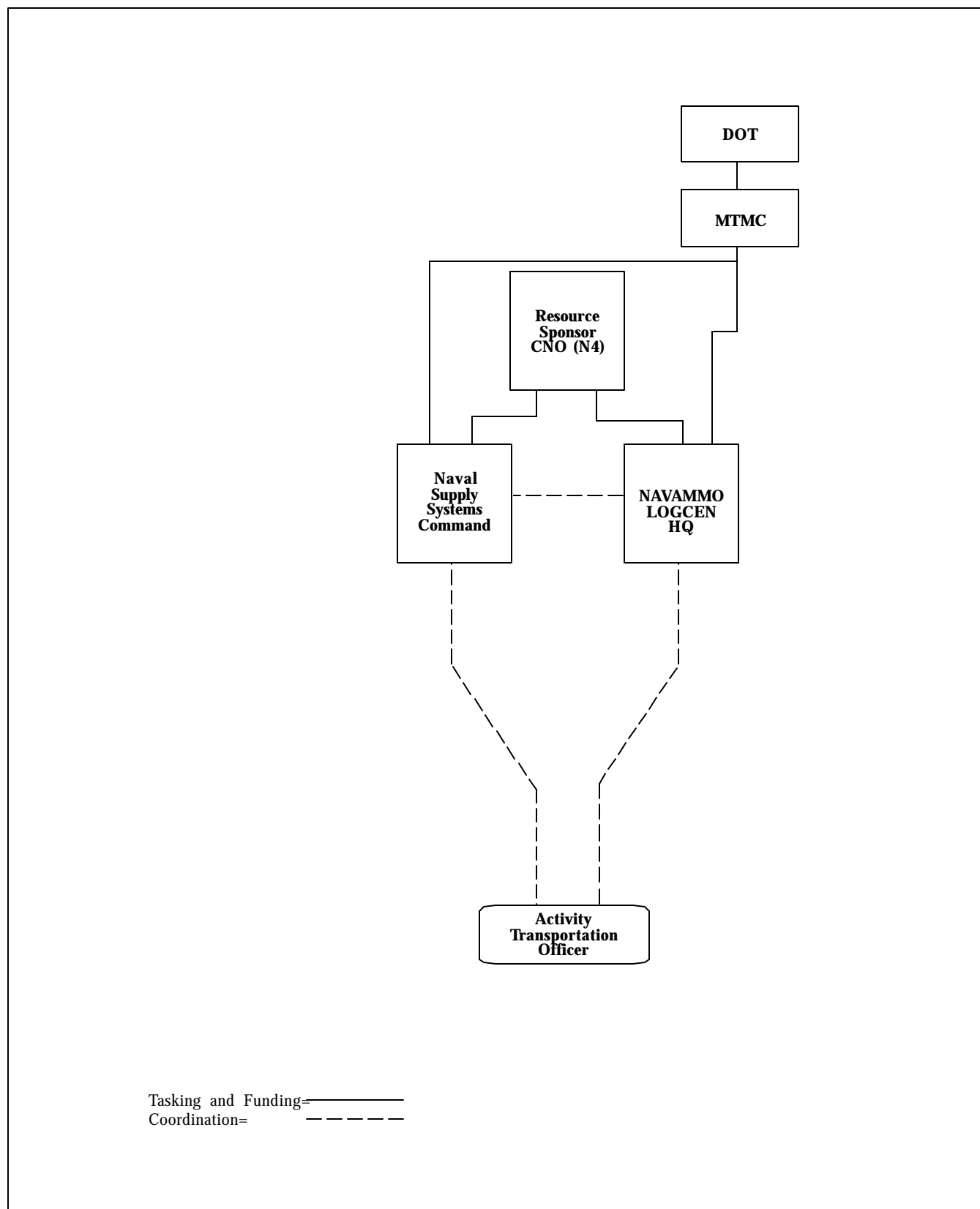


Figure 7-3-1. Transportation Management Organizational Relationships.

7.3.2.3 Transportation Mode Requirements.

a. Motor Vehicles. All ordnance and explosives shipments, foreign and domestic, will comply with the UN recommendation. Additional safety requirements governing shipments within states may be imposed by the individual states and by municipalities through which shipments will move. Navy vehicles transporting ordnance and explosives are subject to all safety regulations applicable to common carriers, as well as to DoN regulations while transporting off-station. Navy owned on-station transportation must meet the requirements of NAVSEA SW023-AG-WHM-010. Specific procedures concerning vehicle types, fuel, cargo space, inspections, operating requirements, drivers' qualifications, explosives compatibility, parking, etc. are found in NAVSEA OP 5 Vol 1 and SW020-AC-SAF-010.

b. Railroad. DOT and Association of American Railroads Safety Regulations, pertaining to safety devices, safety guards, design of equipment, and the like, are mandatory for carrier owned railway equipment used to transport ordnance and explosives on and off Navy and Marine Corps shore activities. Navy owned on-station railcars not used in interchange or off-station service must meet the requirements of NAVSEA SW023-AG-WHM-010. Specific requirements regarding locomotives,

signs and signals, railcar marking inspections, railroad operations, and operations at naval facilities are found in NAVSEA OP 5 Vol 1.

c. Air Shipments. Regulations and requirements described in CFR Title 14 and Title 49, published in Bureau of Explosives Tariff NO BOE-6000, apply to air shipment by commercial aircraft. Regulations and requirements for packaging and handling dangerous materials for transportation by military aircraft are found in NAVSUP PUB 505. Requirements for cargo and aircraft pre-loading inspection, aircraft loading, marking, electrical grounding, and other matters relating to air shipment of ordnance and explosives are found in SW020-AC-SAF-010.

d. Water Transportation. The transshipment of ordnance and explosives by water in vessels engaged in commercial service is governed by Military Sealift Command Regulations for Ammunitions and Explosives, SW020-AC-SAF-010, and CFR Title 49 Parts 171-179 Hazardous Materials Regulations. The transshipment of ordnance and explosives on Navy vessels is governed by the provisions of NAVSEA OP 4 and NAVSEA OP 5 Vol 1. These regulations and procedures include such items as small boat use, dunnage, loading regulations, and responsibility for safety.

CHAPTER 7.4

Environmental Security Management

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CHAPTER 7.4

Environmental Security Management

7.4.1 Environmental Security Management

7.4.1.1 General. National Defense and Environmental Protection. The Navy's ability to accomplish its mission requires daily operations in the land, sea, and air environments. National defense and environmental protection are and must continue to be compatible goals. In order to accomplish this mission element, personnel must be aware of the environmental laws and regulations which have been established by Federal, State, and local governments. OPNAVINST 5090.1B discusses Federal regulations and DoD requirements which apply to Navy ships and shore activities.

7.4.1.2 Perspective. The primary focus of environmental security management is to minimize the effect of non-nuclear explosive ordnance and their handling (production, maintenance, storage, and disposal) on the surrounding ecosystems. Even though there are actual personnel specifically assigned to environmental security management positions at all echelons, anyone working with or around ordnance should consider themselves responsible for the environment.

7.4.1.3 Responsibilities

a. The CNO exercises general supervision and command authority for the application of Federal environmental regulations. Within OPNAV the Deputy Chief of Naval Operations (DCNO) (Logistics) (N4) is responsible for supervising Navy environmental security matters, and coordinates environmental security policy, programs and guidance which effects Navy and Marine Corps forces mutually with the CMC. As such, the DCNO (Logistics) shall:

(1) Monitor proposed Federal environmental legislation, Federal regulations and proposed rules, and coordinate Navy impact analyses, and ensure articulation of Navy positions and concerns in conjunction with the Navy Office of Legislative Affairs (OLA) and the Assistant Secretary of the Navy (I&E).

(2) Establish and regularly update policy, direct, and monitor progress of the Navy environmental and natural resources program.

(3) Serve as the OPNAV assessment sponsor for the environmental and natural resources programs, and as the OPNAV resource sponsor for shore activity environmental and natural resources protection requirements.

(4) Coordinate with resource sponsors, ASN(FM&C), DoD, and OMB in the reconciliation of environmental compliance requirements vs. budgeted resources.

b. NAVAMMOLOGCEN will provide ordnance environmental security management coordination through:

(1) Endorsing annual actions and levels of effort of the Ordnance Environmental Support Office (OESO) located at NSWCDIV Indian Head.

(2) Managing the ordnance environmental protection RDT&E program.

c. OESO is responsible to:

(1) Ensure consistent positions, agreements, permit conditions, and responses to regulatory agencies on ordnance environmental issues, coordinating closely with affected shore activities, major claimants, and other Service representatives.

(2) Serve as the primary Navy interface with Federal and State regulatory agencies on ordnance environmental issues.

(3) Coordinate exchange of ordnance environmental information among Navy shore activities, including distribution of Federal, State, and local laws, rules, and regulations.

(4) Provide assistance to facilities in dealing with regulatory agencies on ordnance issues as requested.

(5) Provide data and information, technical review, and construction and installation environmental evaluations.

d. ESSOs shall cover environmental security issues during explosives safety inspections of shore activities and afloat units.

e. Commanding Officers of shore activities shall:

(1) Comply with applicable substantive and procedural Federal, State, and local environmental laws and regulations, and continuously strive for improvements in all areas of pollution prevention.

(2) Cooperate with Federal, State, and local environmental regulatory officials.

(3) Integrate environmental compliance requirements into all levels of activity management through the application of program management procedures (including oversight, inspection, and identification) and by requesting sufficient resources to support environmental and natural resources programs.

(4) If a commanding officer of a host activity, apply for all Federal, State, and local permits, where appropriate, and coordinate permit conditions with all affected tenant commands. Include responsibilities for environmental and natural resources program, permits, fees and fines, in all host/tenant agreements. In those states or regions where environmental regulatory agencies allow tenant commands to submit and hold their own environmental permits, commanding officers of host commands may delegate authority to sign and hold permits to commanding officers of tenant commands.

(5) Plan, program, budget, and allocate funds for environmental protection costs.

7.4.1.4 Organizational Relationships. The organizational relationships of the commands/offices responsible for environmental security management are depicted in figure 7-4-1.

7.4.2 Environmental Security Program. The Environmental Security Program policies, definitions, and procedures are in a constant state of flux and differ from location to location. Any attempt to describe them in any detail would be unrealistic. The following will generally describe the program areas that specifically affect ordnance activities. The laws have been tried in court and the message has been very clear that ignorance is not an acceptable

defense. The major impact of these programs is on ordnance activities involved in research, production, maintenance, and disposal. However, those activities solely involved in storage, handling, and use can be greatly impacted by these laws through one small accident. Not only are Navy activities and units accountable for violations, but individuals within each activity and unit are personally accountable as well.

7.4.2.1 Hazardous Materials and Waste Management. The terms “hazardous materials” and “hazardous waste” have specific legal and scientific definitions in Federal regulations. Hazardous Wastes (HW) are defined and regulated under the Resource Conservation and Recovery Act (RCRA), Subtitle C, as amended by the Hazardous and Solid Waste Amendments (HSWA) of 1984. RCRA requires cradle to grave management of HW through a recordkeeping system that requires the manifesting of HW shipments from the generation point to disposal. The Federal Facility Compliance Act (FFCA) of 1992 requires that Federal facilities comply with all provisions of Federal, State, interstate, and local hazardous waste laws and regulations. FFCA also requires the Environmental Protection Agency (EPA), in consultation with DoD, to issue regulations on the application of RCRA to military ordnance. The law allows EPA and authorized states to enforce RCRA regulations at federal facilities.

7.4.2.2 Air Pollution Prevention. The Clean Air Act requires the EPA to set binding National Ambient Air Quality Standards, which define how clean the air must be. The Clean Air Act Amendments of 1990 represent the most recent revisions to the Clean Air Act. Standards have been set for six primary pollutants: carbon monoxide (CO), lead, ozone, oxides of nitrogen (NOx), sulfur dioxide, and particulates (PM-10, particulate matter 10 microns in size or less). Air quality standards are achieved, maintained, and enforced by the states through State Implementation Plans (SIPs). SIPs specify emission limits and compliance schedules for pollution sources and are tailored to the needs of the different air quality control regions. This program is a specific concern for those ordnance activities involved in ordnance production, maintenance, and disposal processes which produce air pollutant emissions.

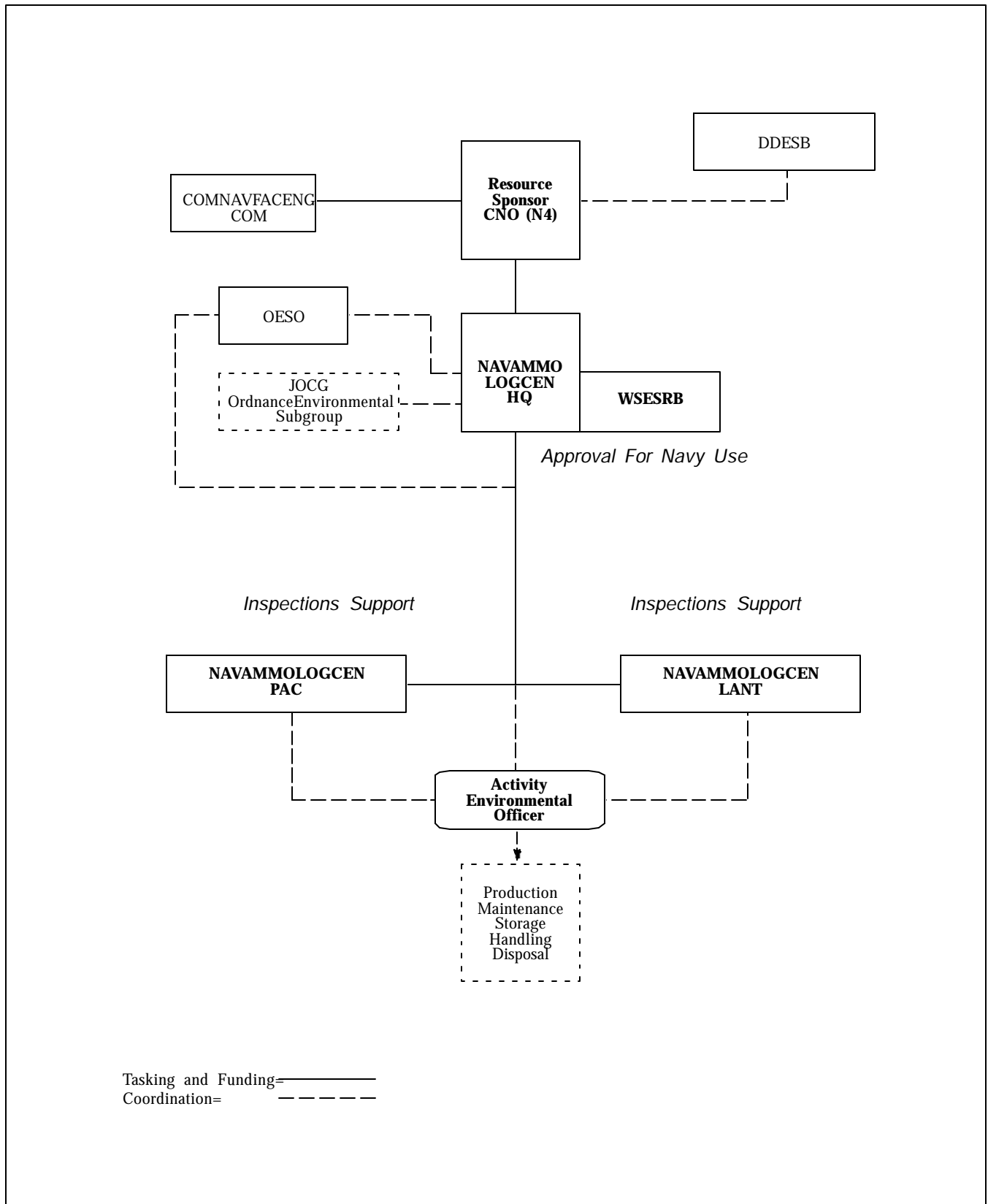


Figure 7-4-1. Environmental Security Management Organizational Relationships.

7.4.2.3 Wastewater Management. The Federal Water Pollution Control Act was issued to ensure restoration and maintenance of the integrity of the nation's navigable waters. The act incorporates provisions for regulating both domestic and industrial waste waters. The Clean Water Act (CWA) makes it illegal for any person, including Federal facilities, to discharge pollutants from a point source into the waters of the U.S. without a permit. The CWA Amendments of 1987 require federal agencies to ensure consistency with state regulations for the control of non-point source of water pollution such as runoff from industrial, residential, and agricultural lands. National Pollutant Discharge Elimination System (NPDES) permits are required for industrial facilities. An important component of the NPDES permitting process is the pretreatment program which sets standards for the control of waste from indirect discharges - those from industrial sources of pollution which discharge

effluent to municipal wastewater treatment facilities rather than directly into water bodies. This program is a specific concern for those ordnance activities involved in ordnance production, maintenance, and disposal processes which discharge pollutants from a point source or produce non-point source water pollution.

7.4.2.4 Ocean Dumping. The Marine Protection, Research, and Sanctuaries Act bars transport of any material from the U.S. for the purpose of dumping into the ocean waters without a permit issued by the EPA, and dumping material from outside the U.S. within the territorial sea or contiguous zone. Ocean dumping of ordnance may only be authorized on a case-by-case basis by the CNO. The single exception to this rule allows ocean dumping from ships and aircraft in an emergency to safeguard life at sea.

SECTION 8

Ordnance Demilitarization/Disposal Management

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CHAPTER 8.1
Disposal Responsibilities

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CHAPTER 8.1

Disposal Responsibilities

8.1.1 Disposal Responsibilities**8.1.1.1 Disposal Policy**

a. DoD 4160.21-M

(1) Provides policy and procedures for the utilization and disposition of excess, surplus, and foreign excess property, and specific reporting requirements for disposable property. It further defines the responsibilities of DLA, Military Services Defense Reutilization and Marketing Service (DRMS), Defense Reutilization and Marketing Regions (DRMRs), Defense Reutilization and Marketing Offices (DRMOs), Defense Reutilization and Marketing Precious Metal Recovery Office (DRMM-R), and the Inventory Control Points in administering and/or accomplishing disposition of excess and surplus properties with interfacing organizations.

(2) Directs the Military Services to establish Special Defense Property Disposal Accounts (SDPDAs) for managing and disposing of property not authorized for transfer to a DRMO. Ordnance and related inert items are categories of property identified in this DoD manual and in DoD 4160.21-M-1 as not authorized for transfer to a DRMO prior to demilitarization, declassification, or inspection and certification as inert. The latter document identifies the items and categories of property requiring demilitarization, specifies their degree of demilitarization, and provides instructions for their transfer to the DRMO after demilitarization or declassification. DoD 4160.21-M also defines the Precious Metals Recovery Program assigned to DLA.

b. DoD 5160.65-M details the specific responsibilities of the SMCA and the Military Services for demilitarization and disposal of ordnance and related inert items. It further states that non-nuclear ordnance demilitarization and disposal will be accomplished in the most efficient

and cost effective manner (usually at the generating activity if the capability exists), and makes the Military Services responsible for all demilitarization accomplished at their respective activities.

c. MIL-M-63012 establishes the specifications to be used in developing a DMWR for the maintenance and demilitarization of ordnance. Unless otherwise specified by the contracting activity, the general style and format of the DMWR shall be in accordance with MIL-M-38784.

d. NAVSEAINST 8027.2 is a Joint Service instruction which establishes demilitarization and disposal policies, responsibilities, and procedures relating to requirements governing the concept, research, development, engineering, and release for production of all new or modified ordnance items and components. The instruction includes the format and content requirements of a Demil Plan.

e. NAVSEAINST 4570.1 establishes the Navy's centralized ordnance demilitarization, disposal, and reclamation program of excess, surplus, and foreign excess non-nuclear ordnance, classified inert ordnance items, and unclassified inert ordnance items processed at all Navy activities.

8.1.1.2 Perspective. The policies in the directives above and environmental laws, have molded the perspective of those involved in disposal management into one of removing ordnance items from Navy active inventory in the most environmentally friendly and cost effective manner. The drive is to consider alternate users of the items; acceptable, alternate uses for the items, or at least some of its components; or environmentally friendly ways of demilitarizing/dispersing of all components of the item, with minimal transportation, as a last resort.

8.1.1.3 Organizational Relationship. Figure 8-1-1 depicts the organizational relationships of those involved in disposal management.

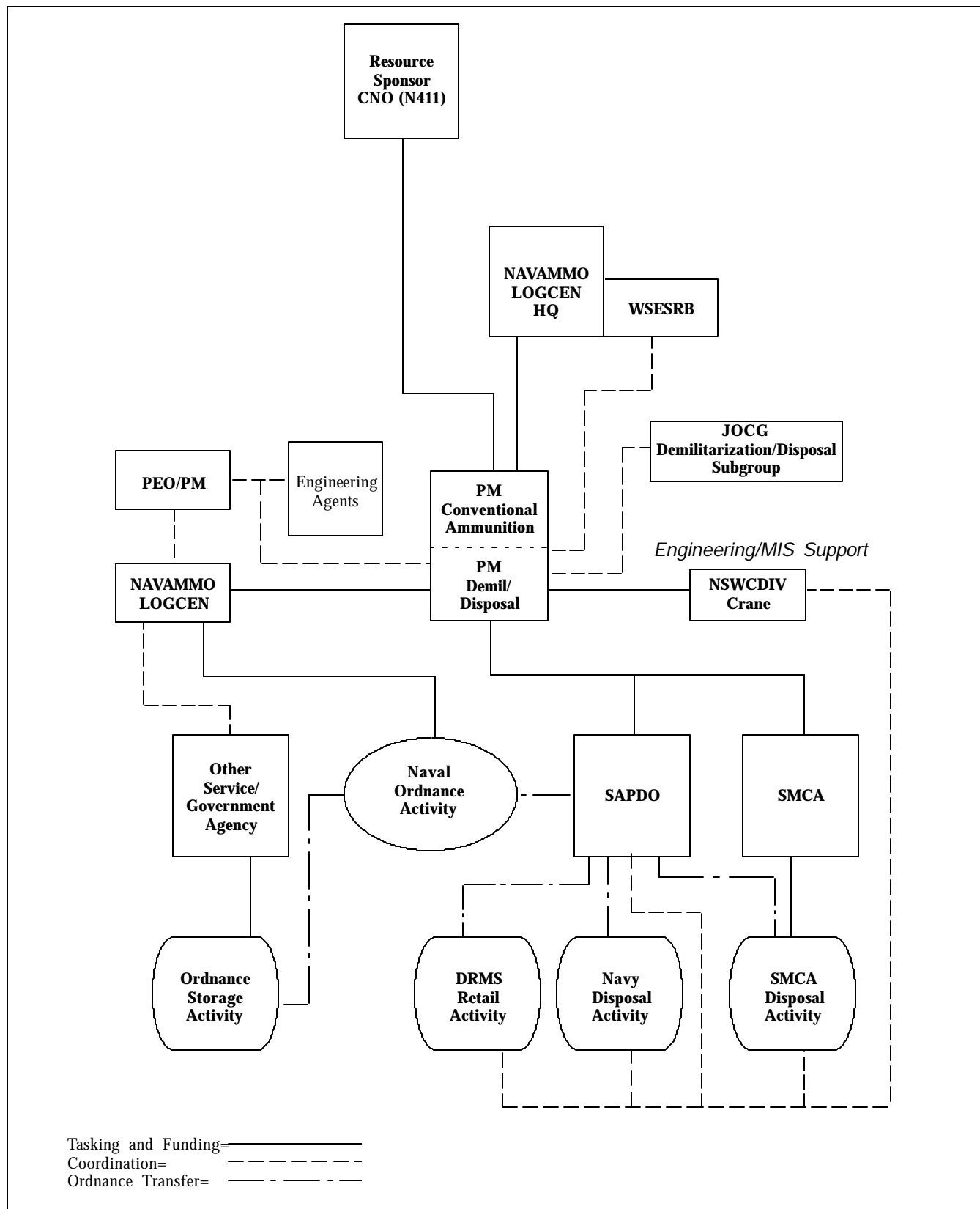


Figure 8-1-1. Demilitarization/Disposal Management Organizational Relationships.

8.1.2 Responsibilities.

8.1.2.1 Acquisition PEOs/PMs.

a. The disposal process actually begins at the beginning of the ordnance item's lifecycle. The PEO/PM, as part of the process for obtaining Approval for Navy Use from the WSESRB, is responsible for developing and submitting a proven disposal plan as required by NAVSEAINST 8027.2, that will be implementable at any time during the projected life span of the item.

b. When ordnance items are presented for disposal without a disposal plan or when the disposal plan on file is no longer acceptable, the Disposal Program Office contacts the item's Acquisition Program Office, if still in existence, to work with them and their engineering agent(s) to develop a DMWR to specify an acceptable disposal plan. If the appropriate Acquisition Program Office is no longer in existence, then the Disposal Program office will fund and direct the development of a DMWR to specify an acceptable disposal plan for the item(s).

8.1.2.2 Ordnance Disposal PM. OPNAVINST 8026.2 defines the disposal program for the Navy. NAVSEAINST 4570.1 implements the centralized ordnance demilitarization and disposal program responsibility within COMNAVSEASYS COM. The program responsibility has been assigned to the COMNAVSEASYS COM Conventional Ammunition Program Office located at NSWC DIV Crane (PM4). The Disposal PM has the following responsibilities.

a. Interpret and implement DoD and Navy policies relative to the assigned mission.

b. Develop, issue, and implement policies and procedures for the disposal program consistent with DoD and Navy policies.

c. Ensure that demilitarization, reclamation, and declassification procedures meet safety and environmental requirements.

d. Promote efficient and economical operations which maximize the principle of reuse and recycling of parts, components, and residual materials such as bulk explosives and propellants.

e. Establish or disestablish SDPDAs, as necessary, at Navy activities processing disposable ordnance.

f. Establish separate DoD Activity Address Codes (DoDAACs) and Routing identifier Codes (RICs) for each SDPDA.

g. Develop, implement, and maintain a centralized Ammunition Disposal Inventory Management System (ADIMS) for the reporting, accounting, and management of all disposable ordnance and inert munitions material (non-nuclear ordnance) from the time disposal is authorized until final disposition, including in-transit reporting.

h. Develop interfaces with the SMCA and JOCG in compliance with DoDDs 5160.65 of 8 March 1995 (NOTAL) and 5160.68 of 3 March 1995 (NOTAL), the DRMS and the DoD utilization screening system. Comply with inert in-transit. Comply with NAVAMMOLOGCEN DRO monitoring, and updating of the ADIMS stock-number file in relation to the Navy stock-number catalog system.

i. Design, procure, and install new demilitarization and disposal equipment, facilities, and related environmental control systems to ensure compliance with Federal, State, and local governing regulations.

j. Develop and implement procedures for reviewing and evaluating the financial requirements of the field activities. Develop and submit the Navy's worldwide disposal program budget and administer the disposal funds, which are provided to the performing Navy activities and SMCA.

k. Develop demilitarization and declassification procedures for new or modified material consistent with the requirements of MIL-M-63012 and NAVSEA OP 5. Assure development of demil plans in accordance with NAVSEAINST 8027.2 as required by OPNAVINST 8026.2.

l. Provide demilitarization and disposal technology for items of Navy design, developed after November 1, 1977, to support SMCA demilitarization and disposal operations.

m. Ensure policies for precious metals recovery and for reclamation (NAVSUPINST 4440.156) are followed in identifying and reclaiming precious metals and other items.

n. Ensure that demilitarization, declassification, and inert processing of disposable non-nuclear ordnance is accomplished economically, safely, and in an environmentally acceptable manner.

o. Provide the SMCA with a 5-year forecast, by 30 March each year, of those disposable non-nuclear ordnance assets projected to be referred to the SMCA for designation of a demilitarization site.

p. Provide the SMCA with an annual confirmation by 30 March, of retail disposal assets to be referred to the SMCA during the following FY.

q. Submit Financial Feeder Reports (DD 1143) to DRMS Battle Creek, MI quarterly as required by DoD 4160.21-M.

8.1.2.3 Engineering. NSWCDIV Crane is tasked by the Disposal PM to provide the following engineering assistance to the disposal program.

a. Design demilitarization equipment and facilities, and develop demilitarization processes and DMWRs detailing procedures as required.

b. Perform operating line assessments of demilitarization operations as described by NAVSEAINST 8010.1.

c. Provide guidance in matters of operations pertaining to safety requirements in coordination with the Disposal PM.

d. Assist the Disposal PM in maintaining the NSN file in ADIMS.

e. Provide other assistance to field activities and the PM, as tasked by the Disposal PM.

f. Perform testing and material evaluation of items scheduled for demilitarization to ensure material is safe for planned operations.

g. Perform stability tests on bulk explosives and propellants designated for commercial sale, as required by DoD 4160.21-M and NAVSEA OP 5 Vol 1.

h. Perform environmental testing, analysis, and evaluation of demilitarization processes, systems, and facilities to ensure pollution abatement requirements are complied with and that abatement systems and equipment performance meet Federal, State, and local government standards.

i. Develop processes, systems, and equipment to meet environmental standards for hazardous materials processing.

j. Develop environmental and RCRA permit applications for Navy demilitarization processes of facilities, as required, and coordinate submissions of these applications with the PM, field activity, and EPA, State, and local government offices.

k. Develop database programs for the accounting and reporting of disposable ordnance material reported by generating activities, consistent with direction provided by the Disposal PM.

l. Establish computer programs for inputs from, and process inputs received from, field activities by remote terminal transmission (CONUS) and AUTODIN (OCONUS) on a weekly batch-mode basis.

m. Provide for program interface with NAVAMMOLOGCEN, (N41) Mechanicsburg Pa. for change notice cards and change bulletin updates. Provide for program interface with DRMS for DoD screening and DoD in-transit reporting requirements. Provide for program interface with SMCA for JCAP demilitarization handbook (volume 1) data, and with the OMS/FOSAMS program for file update at applicable field activities.

n. Provide information for preparing the Report of Excess and Surplus Material at Disposal Activities (DD 1143) as required by DoD 4160.21-M. Provide missing, lost, stolen and recovery information, as required. Provide monthly inventory tonnage reports, summarized by activities, and other management reports relative to program performances.

o. Modify and/or establish additional programs to satisfy DoD or Navy requirements in the management of disposable ordnance.

8.1.2.4 Special Accounts Property Disposal Offices (SAPDOs). Several ordnance activities, both CONUS and OCONUS, have a SAPDO. Each SAPDO services all of the Navy and Marine Corps ordnance activities in their geographical area and is responsible for the following.

a. Managing their SDPDA.

b. Receipt, control, handling, inventory, and disposition of disposal material.

c. Maintaining accountable records.

d. Coordinating workload plans for handling their disposal inventory.

e. Monitoring demilitarization operations.

f. Coordinating processing of inert material to the local DRMO.

g. Managing disposal funding for their activity.

h. Maintaining accurate records in ADIMS for their SDPDA assets.

8.1.2.5 Field Activities. Activities generating disposable materials and processing DROs are subject to the policy guidance and procedural direction provided by a wide range of instructions. These include DoD 4160.21-M, DoD 4160.21-M-1, NAVSEAINST 4570.1, NAVSEA OP 5, NAVSUPINST 4440.156, and NAVSUP P-724 (NOTAL). From these directives, the Field Activities generating excesses are responsible for the following.

a. Requesting disposition authorization for ordnance items which have been designated obsolete, unserviceable, uneconomically repairable, or surplus/excess to requirement of technical manager.

b. Preparing Disposal Turn-In Documents (DTIDs) upon receipt of a DRO from the IM, or for such material that meets criteria for local disposal without need of prior reporting to the IM. DTIDs are required for all items, explosive ordnance or inert, authorized for disposal.

c. Processing expeditiously all DROs.

d. Releasing applicable stock records and transferring disposal material to the nearest SAPDO. The SAPDO subsequently processes such material to a Military Service SPDA or to a DRMO.

e. Ensuring that procedures are followed concerning in-transit shipments of material to other activities or to the DRMO.

f. Ensuring that inert inspection and certification are thorough and complete.

g. Accomplishing safe and economical demilitarization.

h. Returning reusable parts, components, and detail items to active stocks.

i. Performing timely physical inventories and inventory causative research and adjustments.

j. Accounting and reporting of disposable ordnance in accordance with NAVSEAINST 4570.1.

k. Processing material containing precious metals in accordance with DoD 4160.21-M.

l. Submitting annual, quarterly, and FYDP Personal Property Disposal Workload Plans and Financial Status Reports (RCS NAVSEA 4570.1) as required by NAVSEAINST 4570.1.

8.1.2.6 Inventory Managers. DoD 4160.21-M, NAVSEAINST 4570.1, and NAVSUP P-724 (NOTAL) individually and collectively contain the responsibilities and procedures to be followed by the IMs, including the following.

a. Providing DROs to activities generating excess materials.

b. Defining, in conjunction with the technical manager, what constitutes declassification and including such information in the DRO.

c. Identifying on, or transmitting with, the DRO, the major key points of the item which must be demilitarized, designating the materials containing precious metals, and providing a Save List of subassemblies or components subject to reclamation in accordance with NAVSUPINST 4440.156.

8.1.2.7 SMCA Responsibilities. The SMCA is assigned the following disposal responsibilities by DoDINST 5160.68 of 3 March 1995 (NOTAL) and DoD 5160.65-M.

a. Demilitarize and dispose of all non-nuclear ordnance when the capability, technology, and facilities exist.

b. Initiate a Joint Service research and development program to develop a required capability where technology, facilities, and capabilities do not exist.

c. Acquire equipment and facilities required for demilitarization and disposal of non-nuclear ordnance at wholesale locations on a common service (non-reimbursable) basis.

d. Fund for development of demilitarization and disposal technology and preparation of DMWRs for all material in the inventories before November 1, 1977, after receipt at SMCA facilities.

e. Provide the Navy, by 1 August of each year, with a 5-year forecast of technical data requirements (DMWRs, Technical Orders (TOs), and Letters of Instruction (LOIs)) for Navy-peculiar items to be demilitarized at SMCA activities.

f. Provide the Navy with an annual confirmation, by 30 March, of Navy-peculiar items scheduled to be demilitarized at SMCA activities for which technical data is required by 30 March of the following year for processing during the FY following that date.

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CHAPTER 8.2

Disposal Process

8.2.1 Ammunition Disposal Inventory Management System

8.2.1.1 General. ADIMS provides inventory accountability, asset visibility and document control of all Ammunition, Explosives and other Dangerous Articles (AEDA), unclassified and classified inert conventional ammunition accepted by Navy SAPDOs CONUS/ OCONUS and transferred to the SDPDA under the direction and functional guidance of the Disposal PM.

8.2.1.2 Program Performance. The system tracks material by document number, stock number, C/C, lot and/or serial number, location, planned disposal method and status from the date of receipt to final disposition. This audit trail provides for the visibility and recording of all donations, shipments, material transfers between Navy SDPDAs, processing operations (reclamation, demilitarization, declassification or destruction), sales, returns to service stock, and the transfer of unclassified inert items to the servicing DRMO. ADIMS transactions are maintained for historical interrogation by users, statistical research projects, and special requirements of the PM. The system is programmed for remote terminal inputs, on-line data access, and batch updating.

8.2.1.3 ADIMS Interface. ADIMS interfaces with other automated inventory systems. ADIMS programs interface with the SMCA, Rock Island, IL; NAVAMMOLOGCEN, (N41) Mechanicsburg, PA; DRMS, Battle Creek, MI; and OMS programs located at Navy Shore Activities and Naval Magazine, Lualualei, HI by use of hard copy transfer documents.

8.2.1.4 ADIMS Database Files. There are five basic database files in ADIMS.

a. ADIMS Master NSN File. This file contains valid NSNs, Navy Demilitarization Program assigned Local Stock Numbers (LSNs) and Scrap Identification Numbers (SINs) for AEDA and inert materials. The file is updated by the processing of CNCs and Change Bulletin data received from NAVAMMOLOGCEN (N41) Mechanics-

burg PA. for active NSNs, LSNs, SINs, and data elements unique to the program are established and maintained by NSWCDIV Crane.

b. AEDA Asset File. This file contains each ADIMS reporting activity's current inventory for all AEDA and classified inert materials, including any material that has been designated as hazardous waste. Assets are identified by stock number, DoDIC/NALC, C/C, document number, lot and/or serial number, location, RIC of the holding activity, date of last inventory, date record established, last transaction date, and other data management codes which describe the status of the material.

c. AEDA Inactive File. This file contains all records that have become inactive. It contains all data elements of the AEDA asset file. Information from this file is used to generate special statistical reports required by the PM, and is also used to complete the transaction audit trail of assets.

d. Inert Asset File. This file contains each reporting activity's current unclassified inert records, including any material that has been designated as hazardous waste. It contains the basic inventory data elements of the AEDA asset file, along with in-transit visibility for shipments to: utilization, other approved locations, or transferred to the DRMO physically, in place, or shows that an Interim Proof Of Delivery (IPOD) is received from the DRMO.

e. Inert Inactive File. This file contains all of the data elements of the Inert Asset File and all records that have become inactive. Information from this file is used to generate special statistical reports and is also used to complete the audit trail of the assets.

There is also an Asset History File which contains every transaction that has updated or changed the Asset files. The ADIMS user is able to query transaction history by stock number, document number, or lot/serial number.

8.2.1.5 Major Applications. The system contains the six major applications shown in figure 8-2-1. These

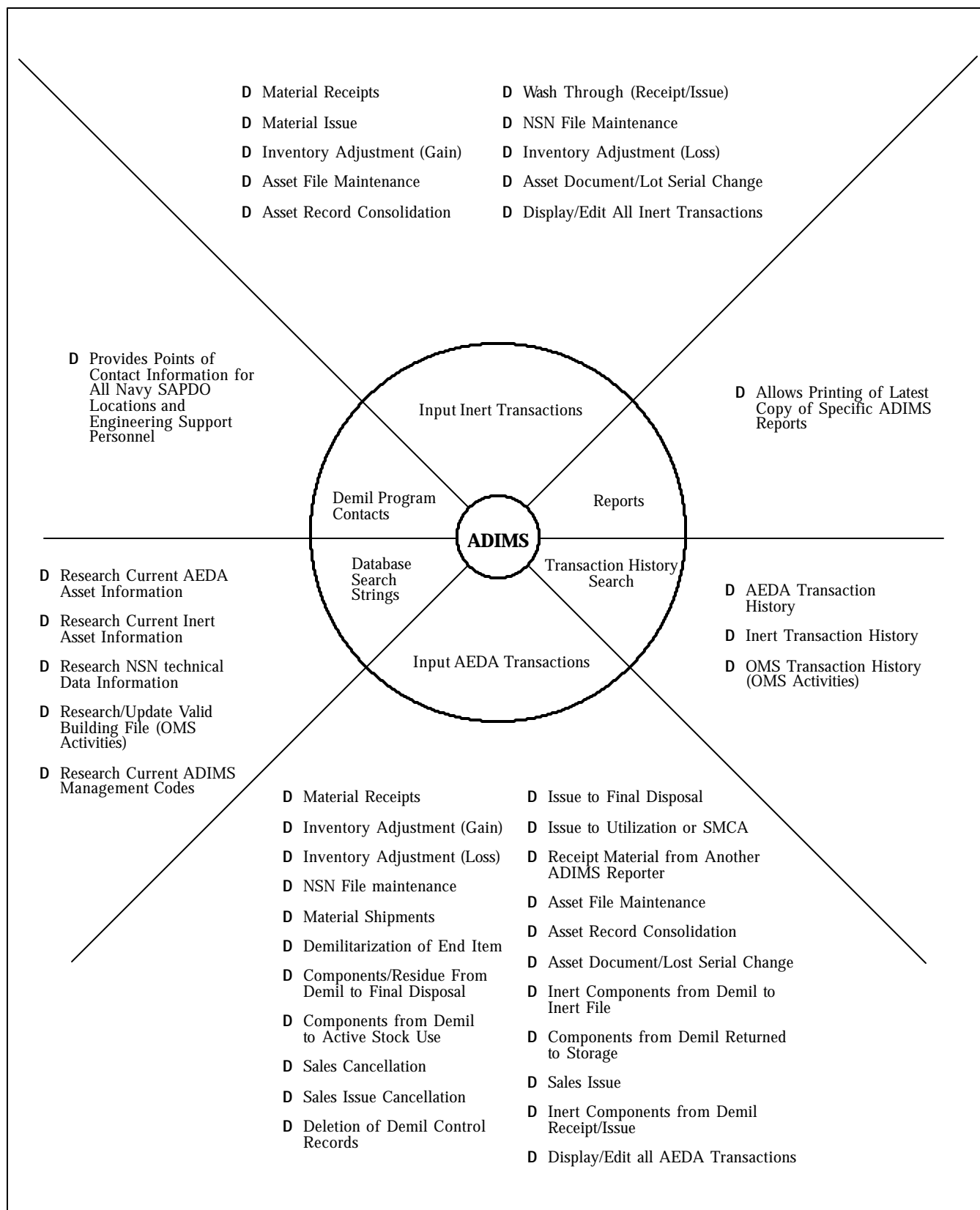


Figure 8-2-1. ADIMS Architecture.

major applications contain all the individual operations to maintain and utilize the accurate and up-to-date inventory data.

8.2.1.6 Computer Hardware. The ADIMS currently resides on a mini computer located in Pensacola, FL. with each of the users having a remote terminal. The system is being upgraded to an open platform configuration where each user will have the program on their computer and interface with other users via modem.

8.2.2 Material Generation

8.2.2.1 Disposal Asset Sources. There are two basic sources of disposal assets.

- a. PE identified through the stratification process.
- b. Assets classified to C/C H by NAR action, or by local reclassification to C/C H due to damage or loss of proper identity.

8.2.2.2 PE Asset Entry into the Disposal Process

- a. PE assets may be ordnance assets in any material C/C other than H, which have been identified through the stratification process to potentially be in excess of active inventory requirements.
- b. Once an asset has gone through the stratification process, and has been approved as potentially in excess of USN requirements, it is subjected to the DoD screening and redistribution process to offer the item(s) to all other potential users and uses. IMs will certify that excess ordnance items have been screened through all channels. Excess items not required within DoD, other government agencies, or for FMS, are designated by IMs for disposal by quantity and location.

8.2.2.3 Disposal Release Order

- a. Processing of ordnance items and classified inert items for disposal begins once the item has been properly classified in accordance with the technical manager and IM directives as obsolete, unserviceable, uneconomically repairable, surplus/excess to requirement, or placed in C/C H.
- b. The ordnance activity in possession of the item makes a value determination of the item(s) based on guidance contained in as NAVSUP P-724 (NOTAL).
- c. For items determined to fit the criteria for "Low Value," the ordnance activity in possession of the item is

authorized to take disposal action by transferring the item(s) to their servicing SAPDO or DRMO without prior IM direction.

d. For items determined to not fit the criteria for "Low Value," the ordnance activity in possession of the item submits an:

(1) Ammunition Disposition Request and Authorization (ADRA), form NAVSEA 8012/2, to the appropriate IM for disposition authorization of items having a current NSN/NICN, in accordance with NAVSUP P-724 (NOTAL). Items which have been placed in C/C H do not require this step as CAIMS will automatically generate a DRO on the next 30 day cycle.

(2) Cataloging/Identification/Disposition Request, Form NAVAMMOLOGCEN-8010/57, to NAVAMMOLOGCEN for disposition authorization of items that are uncoded and not identifiable to an NSN, in accordance with NAVSUP P-724 (NOTAL).

(3) Deleted Item Report in MILSTRIP format to NAVAMMOLOGCEN for disposition authorization of items, for which disposal authorizations have not been received, that have been deleted from NAVSUP P-802, in accordance with NAVSUP P-724 (NOTAL).

e. The IM, upon receipt of a request from an ordnance activity, will perform required research on the item(s) and forward a DRO, as appropriate, back to the requesting activity. The DRO will contain all required data, including demilitarization requirements, for the ordnance activity to properly prepare and process the item as directed.

f. An ordnance activity receiving a DRO will do the following, in accordance with NAVSUP P-724 (NOTAL).

(1) Prepare a DTID DD Form 1348-1 for transferring the item(s) to a SAPDO or DRMO.

(2) Transmit a DRO Denial to the IM for items that have a zero balance.

(3) Transmit a DRO Denial to the IM for items that have discrepant data elements, reflecting the applicable "Reject Advice Code" that best describes the reason the DRO is being rejected.

(4) Submit a Cancellation Confirmation to an IM DRO Cancellation Notice.

8.2.3 Material Movement

8.2.3.1 Shipment. The items are then shipped to a SAPDO or DRMO as directed by the DRO with the accompanying DTID. For ordnance activities where there is a SAPDO, the DTID is delivered without any movement of the actual item(s).

8.2.3.2 DRMO Data Entry. For items transferred to a DRMO, the appropriate data is entered into the Integrated Disposal Management System (IDMS).

8.2.3.3 SAPDO Data Entry. For items transferred to a SAPDO, the appropriate data is entered into ADIMS.

8.2.3.4 Acceptance of Accountability. The receiving DRMO or SAPDO provides the turn-in activity a signed copy of the DTID signifying "Official Acceptance of Accountability" for the item(s) being transferred. Additional interim and follow-up procedures are identified in NAVSUP P-724 (NOTAL).

8.2.3.5 Removal from Active Inventory. Upon receipt of the signed copy of the DTID, the turn-in activity submits proper transactions to remove the item(s) from all active inventory records.

8.2.3.6 Demilitarization Actions. The following actions are taken prior to the sale of inert items that require demilitarization in accordance with directions contained in the DRO.

a. The SAPDO, with direction and funding from the Disposal PM, schedules the demilitarization process.

b. The SAPDO prepares a new DTID for material transfer to a DRMO, upon completion and verification of the demilitarization process, and certification that the material is inert and/or empty as required.

c. The items are then shipped to a DRMO with the accompanying DTID.

d. The receiving DRMO enters the appropriate data into IDMS.

e. The receiving DRMO provides the turn-in SAPDO a signed copy of the DTID signifying "Official Acceptance of Accountability" for the item(s) being transferred. Additional interim and follow-up procedures are identified in NAVSUP P-724 (NOTAL).

f. Upon receipt of the signed copy of the DTID, the turn-in SAPDO enters the DRMO acceptance of material and issue from inventory into ADIMS.

8.2.3.7 Transfer Actions. The following actions are taken for items that require transfer to another SAPDO or an SMCA activity for proper demilitarization/disposal processing.

a. The SAPDO, with direction and funding from the Disposal PM, prepares a new DTID for material transfer to the other SAPDO or SMCA activity as directed.

b. The items are then shipped with the accompanying DTID.

c. Receipt of the Material.

(1) The receiving SAPDO enters the appropriate data into ADIMS, which automatically removes the item(s) from the turn-in SAPDO's records.

(2) The receiving SMCA activity enters the appropriate data into their Standard Depot System.

d. The receiving SMCA activity provides the turn-in SAPDO a signed copy of the DTID signifying "Official Acceptance of Accountability" for the item(s) being transferred. Along with the transfer of accountability, liability for and profitability from the item(s) also transfer to the Army. The only exception is for components specifically identified on the DTID for return to the Navy for reuse.

e. Upon receipt of the signed copy of the DTID, the turn-in SAPDO enters the acceptance of material and issue from their inventory in ADIMS.

8.2.4 Material Sales. Military commands are required to transfer material to a DRMO to sell to the public. Military commands are not authorized to sell material directly to the public.

8.2.4.1 Inert/Empty Certification. It is the responsibility of the turn-in activity to ensure that any and all demilitarization and inert/empty certification requirements are completed prior to sale of the material by a DRMO. This is usually accomplished prior to transfer of the material to the DRMO, but under special circumstances may occur after transfer of the material without transfer of the responsibility.

8.2.4.2 Funds from Sales. Funds received from the sale of ordnance material are given to the Disposal PM to reduce programmed costs of the demilitarization and disposal processes.

8.2.5 Material Demilitarization, Component Reclamation. Every effort is now being made to reduce the

amount of material disposed of by destructive means, to minimize the impact on the environment and recover as much item cost as possible.

8.2.5.1 Breakdown and Demilitarization. Breakdown and demilitarization of ordnance items in the ADIMS inventory are directed and funded by the Disposal PM.

a. Items are broken down into components to facilitate reuse or sale of the components to the maximum extent possible. Even the energetic material is recovered for reuse whenever possible.

b. For items/components with classified or specific military functions that will not be reused, that characteristic is required to be altered sufficiently to preclude reverse engineering or reuse by others for its originally intended purpose.

8.2.5.2 Component Reuse. Components identified for reuse are placed back into active inventory by transfer from the SAPDO to an ordnance activity, as directed by the Disposal PM, utilizing form DD 1348-1.

a. The items are then shipped as required to the designated ordnance activity with the accompanying form DD 1348-1.

b. The receiving ordnance activity enters the appropriate data into their ordnance inventory management system.

c. The receiving ordnance activity provides the turn-in SAPDO a signed copy of the form DD 1348-1 sig-

nifying "Official Acceptance of Accountability" for the item(s) being transferred.

d. Upon receipt of the signed copy of the DD 1348-1, the turn-in SAPDO enters the ordnance activity acceptance of material and issue from inventory in ADIMS.

8.2.5.3 Component Sale. Components identified for sale are transferred from the SAPDO to a DRMO, as directed by the Disposal PM, in accordance with procedures outlined in subparagraph 8-2.3.6.

8.2.6 Material Destruction. Even with efforts to reuse the ordnance item's energetic material whenever possible, much of the energetic material from ordnance items in the ADIMS inventory ends up being destroyed.

8.2.6.1 Destruction Facilities. The majority of energetic material destruction is accomplished by SMCA activities as directed by DoD 5160.65-M, through transfer of the ordnance items as outlined in subparagraph 8-2.3.7. The Navy presently has very few facilities sited for energetic material destruction with only a very limited capability.

8.2.6.2 Emergency Destruction. In emergency situations where transportation of the energetic material would pose an unacceptable risk to the surrounding public population (e.g., destabilized propellant), Navy EOD teams are authorized to locally dispose of the item(s)

8.2.6.3 Item Removal from Inventory. Upon destruction of the item, the SAPDO enters the appropriate data in ADIMS and the item is removed from inventory.

SECTION 9

Security Assistance Program Management

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CHAPTER 9.1

Foreign Military Sales

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CHAPTER 9.1

Foreign Military Sales

9.1.1 Legislative Authority. The Arms Export Control Act (AECA) of 1976, as amended, states that no defense articles or defense services may be sold or leased to any country or international organization under the AECA unless the President finds, in accordance with section 3 of the AECA as amended, that:

a. The furnishing of defense articles and defense services to such country or international organization will strengthen the security of the U.S. and promote world peace.

b. The country or international organization shall have agreed not to transfer title of, or possession of, any defense article or related training or other defense service so furnished to it to anyone not an officer, employee, or agent of that country or international organization, and not to use or permit the use of such article or related training or other defense service for purposes other than those for which furnished unless the consent of the President has first been obtained.

c. The country or international organization shall have agreed that it will maintain the security of such article and will provide substantially the same degree of security protection afforded to such article by the U.S.

d. The country or international organization is otherwise eligible to purchase or lease defense articles or defense services. The countries or international organizations found eligible to purchase or lease defense articles or defense services under the Presidential finding are also subject to other provisions of the AECA.

9.1.2 Eligible Countries. The list of eligible countries and international organizations determined by the President is found in chapter 6 of DoD 5105.38-M.

9.1.3 Responsibilities. Within the Executive Branch, the National Security Council (NSC), the OMB, the Department of the Treasury, and others all have responsibilities related to Security Assistance (SA). However, aside from the President, the principal legislated responsibilities fall to the Secretary of State and DoD.

9.1.3.1 Secretary of State. The Secretary of State is responsible for continuous supervision and general direction of the program. This includes determining whether there will be a program for a particular country or organization and, if so, its size and scope. It also includes the determination of whether a particular sale will be made and, if so, when.

9.1.3.2 Secretary of Defense. The SECDEF is responsible for establishing military requirements and for implementing programs effecting the transfer of defense articles and services. DoD 5105.38-M is the governing instruction for the Security Assistance Program (SAP) within DoD of which FMS is a major element.

9.1.3.3 Congress. Congress authorizes and appropriates the funds for United States Government financed portions of SA. Congress also has an oversight role with respect to the sale of defense articles and services to foreign countries and international organizations.

9.1.3.4 Under Secretary of Defense for Acquisition (USD(A))

a. U.S. development and acquisition, involving the expenditure of U.S. funds or equivalent compensation, of foreign technical information or components.

b. Joint U.S./foreign development programs involving shared efforts and expenditure of U.S. funds or equivalent compensation.

c. Foreign production of U.S.-designed equipment (i.e., coproduction) under predominantly commercial arrangements with shared product improvement potential, involving U.S. funds committed or anticipated.

d. Foreign production of U.S.-designed equipment (i.e., coproduction) with anticipated or committed U.S. second source utilization (foreign countries' acquisition of U.S. data or equipment by means of either commercial or FMS arrangement is secondary issue).

9.1.3.5 Defense Security Assistance Agency (DSAA)

a. Foreign production of U.S.-designed equipment, under either commercial or FMS arrangements, with no

U.S. program or commitments involved (but with flow-back included without charge).

b. Foreign production of U.S. designed equipment (i.e., coproduction) where the principal issue is acquisition of data or equipment from U.S. sources, via FMS or commercial, without U.S. commitment or funding for second source.

c. Sale of U.S. equipment or services in order to further the foreign production of U.S. designed equipment with no U.S. commitment or funding involved.

9.1.3.6 Navy International Programs Office (NAVY IPO). The NAVY IPO is responsible for forwarding the Letter of Request (LOR) for ordnance items to NAVAMMOLOGCEN for technical screening and development of the Letter of Acceptance (LOA) data, and preparing the LOA/1513 form for DSAA.

9.1.3.7 NAVAMMOLOGCEN (N41) Mechanicsburg, PA. NAVAMMOLOGCEN (N41) is responsible for coordinating technical screening of all FMS cases, and developing LOA data via the Navy Security Assistance Data System (NSADS). Upon receipt of case approval and funding, NAVAMMOLOGCEN (N41) initiates filling the request from stock or by procurement.

9.1.3.8 PEO/PM. The PEO/PM is responsible for providing the required technical screening on all FMS cases relating to the ordnance under their purview. The technical screening performed by the PEO/PM is to determine if the requested item is to be procured with a Navy planned buy (5-year plan), as a stand-alone buy (no Navy buy planned), or issued from stock via the RIK process. Currently these decisions are made on a case-by-case basis. For those items that are recommended to be procured (with a Navy planned buy or stand-alone), an engineering cost estimate is done.

9.1.3.9 Navy International Logistics Command (NAVILCO). NAVILCO oversees an FMS case involving ordnance, once the signed LOA is received and funds have been transferred to the U.S. Treasury. NAVILCO receives obligation authority from DFAS Denver, who acts as the banker for all FMS cases. It then passes the obligation authority on to NAVAMMOLOGCEN (N41) via a Project

Directive (PD) for procurement or engineering services, or a requisition for filling the request from existing inventory.

9.1.4 Organizational Relationships. Figure 9-1-1 identifies the organizations involved in the SA program for non-nuclear ordnance and their relationship to each other.

9.1.5 FMS Case Processing. Processing an FMS case takes coordination between many different DoD and State Department activities. The following steps are a representation of a normal progression of an FMS case.

a. An FMS case begins when the NAVY IPO receives an LOR from a country or international organization on the President's approved list. NAVY IPO determines releasability of the requested item or services and, if approved, forwards the request to NAVAMMOLOGCEN (N41) for screening.

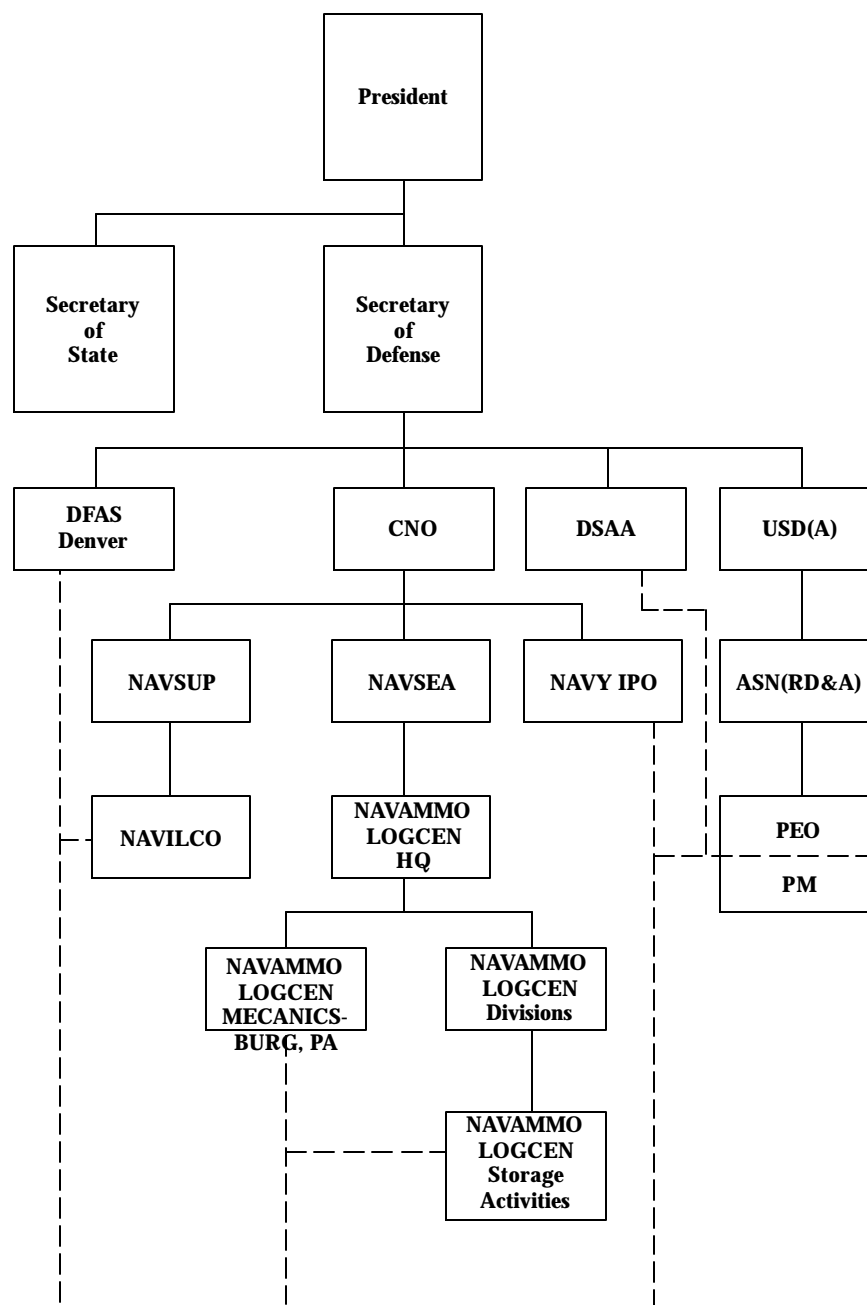
b. NAVAMMOLOGCEN (N41) forwards the request to the appropriate PEO/PM for technical screening. Upon receipt of the technical screening back from the PEO/PM, the LOA data is developed and entered into the NSADS system.

c. NAVY IPO receives the LOA data via the NSADS system and prepares the LOA/1513 and forwards it to DSAA for transmittal to the requesting country or international organization.

d. If the requesting country or international organization accepts the terms of the LOA, they sign it and return it to the Defense Finance and Accounting Service (DFAS), Denver office with appropriate accounting data to cover the costs identified in the LOA. If the requesting country or international organization does not accept the terms of the LOA, further negotiations are conducted with DSAA or the case is closed.

e. Concurrently with the signed LOA, the requesting country/international organization wires the funds to the U.S. Treasury who provides DFAS Denver with the required budget approval authority based on the funds received.

f. DFAS Denver, upon receipt of budget approval authority, issues obligation authority to NAVILCO, with a copy to NAVAMMOLOGCEN.



Tasking and Funding=—————
 Coordination=—————

Figure 9-1-1. Security Assistance Program Organizational Relationships.

g. Upon receipt of the obligation authority, NAVAMMOLOGCEN (N41) Mechanicsburg, PA has the appropriate PEO/PM revalidate the LOA and then issues the FMS case direction to NAVILCO.

h. If the case direction is to provide the request by procurement, NAVILCO passes the obligation authority to NAVAMMOLOGCEN (N41) via a PD. NAVAMMOLOGCEN (N41), upon receipt of the PD, initiates procurement actions with the PEO/PM, and bills the FMS case.

i. If the case direction is to provide the request from stock, NAVILCO passes the obligation authority to NAVAMMOLOGCEN (N41) via a requisition.

(1) NAVAMMOLOGCEN (N41) Mechanicsburg, PA forwards the requisition to the appropriate ordnance activity for stock issue. The ordnance activity ships the material and documents shipment in their automated inventory system which is transmitted to NAVAMMOLOGCEN (N41) into CAIMS.

(2) NAVAMMOLOGCEN (N41), then initiates billing to NAVILCO via CAIMS. The FMS case is debited and the appropriate Navy appropriation credited for RIK procurement by the PEO/PM.

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CHAPTER 9.2

Standardization Agreements (STANAGs)

9.2.1 Definition. A NATO Standardization Agreements (STANAG) is defined as the record of an agreement among several or all of the member nations of NATO to adopt like or similar military equipment, ordnance, supplies and stores; and operational, logistics, and administrative procedures. National acceptance of a NATO allied publication issued by the Military Agency for Standardization (MAS) may be recorded as a STANAG.

9.2.2 Standardization Areas. As described in the STANAG governing instruction AAP-3 (NOTAL), the three main areas of standardization are interdependent. However, it frequently occurs that a single working group under the direction of one Tasking Authority (TA) is the appropriate body to effect standardization of a specific matter which involves two or all three main areas. It is the responsibility of the working group TA to ensure that when it undertakes work outside its stated area, the concurrence of all other relevant TAs is obtained and that thereafter they are kept informed of all progress. There are three main areas of standardization.

9.2.2.1 Operational. Operational standardization (doctrine, tactics, and procedures) is under the tasking authority of the Military Committee (MC).

9.2.2.2 Material. Material standardization is under the tasking authority of the Conference of National Armaments Directors (CNAD).

9.2.2.3 Administrative. Administrative standardization is normally placed under an appropriate tasking authority on a case by case basis.

9.2.3 Application of Civilian Standards. As a general rule, NATO should apply the following outline strategy with respect to the future application of civilian standards.

a. NATO STANAGs shall only be developed when the respective requirements are not covered by recognized civilian standards.

b. The following general order of precedence shall be applied when selecting civilian standards for purposes of NATO standardization.

(1) International Organization for Standardization (ISO).

(2) International Electrotechnical Commission (IEC).

(3) International Telecommunication Union (ITU).

(4) European Standards, such as Euronorm and European Telecommunication Standards (ETS).

(5) Regional Standards.

(6) National Standards.

c. International databanks and the international system for the classification of standards, ICS, shall be used to identify relevant civilian standards which must be studied for suitability for purposes of NATO standardization, taking into account regional variances.

d. Each STANAG shall be supplemented by a statement identifying the civilian standard(s) forming the basis of the agreement, or confirming that no suitable civilian standard(s) exists. Civilian standards may be adopted for purposes of NATO standardization by referencing the applicable civilian standardization organization, number, title and date of issue, under a STANAG cover sheet. Additional military augmentations or limitations may be specified: in the standard being adopted under the covering STANAG, in the standard's supplement, or in the covering STANAG itself.

9.2.4 Standardization Publication. The MAS chairman has the responsibility for the coordination and maintenance of information on STANAGs and APs. Details are collated and published in AAP-4 (NOTAL) - NATO Standardization Agreements and Allied Publications.

9.2.5 Languages. All STANAGs are issued in both NATO official languages, English and French. For STANAGs that contain large technical annexes and appendices with very little text, the translation of those annexes and appendices will be subject to mutual agreement between the TA and the nations concerned. Their translation may be

accomplished by the nations or NATO, as determined by the TAs.

9.2.6 Measurement. The International System of Units as defined by the ISO (ISO 1000) is to be the primary system used in NATO standardization documents. If another system is used, it will be stated.

9.2.7 Naval Ammunition Interchange Working Party (NAIWP). The major working group which covers ordnance related STANAGS is the NAIWP.

9.2.7.1 Navy Representation. The U.S. Navy representation on the NAIWP consists of the following commands and offices.

- a. U.S. Naval Board Member, Military Agency for Standardization.
- b. CNO, Ordnance Program and Policy Branch.

- c. NAVSEA, Combat Systems Support Group.
- d. Navy International Programs Office.
- e. Naval Doctrine Command.
- f. NAVSEA Conventional Ammunition Program Office (PM4).
- g. Naval Ammunition Logistics Center.
- h. Other ordnance PEOs/PMs participate on ordnance issues affecting their program(s).

9.2.7.2 Ordnance STANAGs. There are several STANAGs covering non-nuclear ordnance. Each STANAG has an assigned NATO Custodian and a U.S. Cog Engineer. Figure 9-2-1 contains the listing of the current and presently proposed STANAGS under the cognizance of the NAIWP, or under the cognizance of another Working Party with NAIWP interest.

	Document Title	Custodian	U.S. Cog
1214	20 MM Oerlikon Gun Ammunition Interchangeable Within NATO Naval Forces	PO	NAVSEA PM4
1233	Procedures For RADHAZ Control In Ports and The Territorial Sea	FR	NAVAMMOLOGCEN
1239	20 MM RH 202 Gun Ammunition Interchangeable Within NATO Naval Forces	GE	NAVSEA PM4
1245	40 MM/L60 Gun Ammunition Interchangeable Within NATO Naval Forces	UK	NAVSEA PM4
1250	100 MM Gun Ammunition Interchangeable Within NATO Naval Forces	FR	NAVSEA PM4
1283	76 MM/62 Gun Ammunition Interchangeable Within NATO Naval Forces	US	NAVSEA PM4
1284	3 IN/50 Gun Ammunition Interchangeable Within NATO Naval Forces	US	NAVSEA PM4
1285	40 MM/L70 Gun Ammunition Interchangeable Within NATO Naval Forces	GE	NAVSEA PM4
1286	5 IN/38 Gun Ammunition Interchangeable Within NATO Naval Forces	US	NAVSEA PM4
1287	5 IN/54 Gun Ammunition Interchangeable Within NATO Naval Forces	US	NAVSEA PM4
1307	Max. NATO Naval Op. Electromagnetic Environment Produced by Radio and Radar		NAVAMMOLOGCEN
1311	ATP-29(A) SUPP 1 - NATO Maritime Equipment Capabilities and Data	UK	NAVSEA PM4
1340	MK 48 MOD 4 Torpedo Interchangeable Within NATO Naval Forces	US	PEO UNSEAWAR
1341	Harpoon Missile Interchangeable Within NATO Naval Forces	US	PMA 258D
1342	MK 46 Torpedo Interchangeable Within NATO Naval Forces	US	PEO (USW)
1343	ASROC System Interchangeable Within NATO Naval Forces	US	PMO 406
1345	130 MM (5.125 IN) Decoy Ammunition Interchangeable Within NATO Naval Forces	US	NAVSEA PM4
1346	L-5 MOD 4 Torpedo Interchangeable Within NATO Naval Forces	FR	PEO (USW)
1348	375 ASW Rocket Interchangeable Within NATO Naval Forces	FR	PMO 406
1349	STANDARD Missile Interchangeable Within NATO Naval Forces	GE	PMS 422-23
1350	100 MM Decoy System Ammunition Interchangeable Within NATO Naval Forces	UK	NAVSEA PM4
1359	20 MM F2 Gun Ammunition Interchangeable Within NATO Naval Forces	FR	NAVSEA PM4
1360	30 MM GOALKEEPER Gun Ammunition Interchangeable Within NATO Naval Forces	NL	NAVSEA PM4
1361	57 MM L/70 Bofors Gun Ammunition Interchangeable Within NATO Naval Forces	NO	NAVSEA PM4
1362	PENGUIN Missile Interchangeable Within NATO Naval Forces	NO	PEO (TAD)
1386	Breda Rockets Interchangeable Within NATO Naval Forces	IT	NAVSEA PM4
1392	Submarine Pyrotechnics Interchangeable Within NATO Naval Forces	NL	NAVSEA PM4
1393	57 MM Decoy (Barricade) Ammunition Interchangeable Within NATO Naval Forces	UK	NAVSEA PM4
1394	20 MM CIWS PHALANX Gun Ammo Interchangeable Within NATO Naval Forces	US	NAVSEA PM4
1402	Guidelines for the NTA Assessment of Naval Gun Ammunition Interchangeability	UK	NAVSEA PM4
1405	AOP-27, Guidelines on the Interchangeability of Ammunition Within NATO Naval Forces	NL	NAVSEA PM4 NAVAMMOLOGCEN
1417	STING RAY Torpedo Interchangeable Within NATO Naval Forces	UK	PEO (USW)
1436	SEA SKUA Missile Interchangeable Within NATO Naval Forces	UK	PEO (TAD)
Draft	EXOCET Proposed STANAG	FR	PEO (TAD)
Draft	MISTRAL Proposed STANAG	FR	TBD

Figure 9-2-1. Ordnance Stanags.

SECTION 10

Training

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CHAPTER 10.1

System Acquisition Training

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CHAPTER 10.1

Systems Acquisition Training

10.1.1 Training Requirements for Acquisition Managers.

10.1.1.1 General. Acquisition management is governed by laws and regulations. It has been determined that to reasonably hold one accountable for complying with these laws and regulations, there needed to be formal training provided specifically targeted to each function within acquisition management. This requirement led to the creation of the Defense Systems Management College (DSMC), located at Fort Belvoir, VA. DSMC is a Joint-Service college for all military, civil servant, and defense industry personnel involved in DoD systems acquisition management.

10.1.2 Defense Systems Management College. DSMC offers a solid education in defense acquisition through courses covering various aspects of program, financial, and logistics management. Further information can be obtained by calling DSN 655-2227 or commercial (703) 805-2227.

10.1.3 Training Requirements Identified During Acquisition.

10.1.3.1 Navy Training Plan (NTP). The NTP is a product of the acquisition process. It is an official statement of billets, personnel, and training resource requirements needed to support the introduction and life-cycle operational use of an ordnance item or weapons system. The NTP assigns responsibilities for planning, programming, and implementing actions necessary to accomplish the following.

a. Ensure coordination of billets, personnel, military construction, training support, and training planning

concurrently with the ordnance item or weapons system development and production.

b. Provide efficient and adequate training programs phased with initial ordnance item or weapons system introduction and subsequent modifications.

10.1.3.2 Training Aids. Another important training issue during the acquisition phase is identifying training aid requirements and including them in the acquisition plan. Training aids are covered in the NTP. However, occasionally an ordnance item or weapons system will be introduced into the system, or an existing one modified, which does not result in the development or update of an NTP. In these cases the need for new training aids must still be considered.

10.1.3.3 Training Aid Users. While developing an acquisition plan for a new ordnance item or weapons system, the following schools at a minimum need to be consulted to determine if any training aid requirements exist to provide proper training to the Fleet on the new item.

- a. Gunners' Mate (GM) School,
Service Schools Command
(SERVSCOLCOM)
Great Lakes, IL 60088-5400
- b. Fleet Combat Training Center Atlantic
(FCTCL), Dam Neck
1912 Regulus Ave.
Virginia Beach, VA 23461-2098
- c. Navy School, Explosive Ordnance Disposal
(NAVSCOLEOD)
Eglin AFB, FL 32542-6009

CHAPTER 10.2

Ordnance Specialty Training

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CHAPTER 10.2

Ordnance Specialty Training

10.2.1 Training Requirements.

10.2.1.1 General. Training requirements for individuals and groups involved directly or indirectly in ordnance or explosives handling can be found in many different instructions. Most process governing instructions contain a section which identifies required training. NAVSEA OP 5 volume 1 appendix D covers a broad spectrum of training requirements. Each TYCOM has ordnance training courses listed in their training requirements manual. There are many technical training courses available to cover training requirements in the following.

- a. Ordnance management.
- b. Explosives safety.
- c. Ordnance transportation.
- d. Ordnance handling.
- e. Ordnance automated management systems.

10.2.2 Training Sources. For many, identifying all of the available training is as difficult as determining all of the training requirements. No one document exists that identifies all of the available ordnance training. One good source is the Catalog of Navy Training Courses (CANTRAC). The shortfall of the CANTRAC is that it only lists formal schoolhouse training identified by a Navy Course Identification Number (CIN). In this era of joint training, there are many formal ordnance training courses offered by the Army that are available to the Navy, and informal ordnance training courses within the Navy, that do not have an assigned Navy CIN. Another good reference for training

sources is NAVSEA OP 5 volume 1 appendix D. The Catalog of Nonresident Training Courses, NAVEDTRA 12061, provides information on available correspondence courses.

10.2.3 Schoolhouses. The following schoolhouses provide the majority of the formal training or training materials for informal training.

a. FCTCL, Dam Neck, VA. FCTCL provides training in ordnance management and ordnance handling for military personnel on the east coast.

b. Fleet Training Center (FTC), San Diego, CA. FTC provides training in ordnance management and ordnance handling for military personnel on the west coast. Further information can be obtained by calling FTC at DSN 526-7559 or commercial (619) 556-7559.

c. NSWCDIV Crane. Crane provides onsite training on the ordnance automated management systems which they manage. Further information can be obtained by calling Crane at DSN 482-5015 or commercial (812) 854-5015.

d. NSWCDIV Indian Head. Indian Head provides standardized training materials for informal ordnance handling, and ordnance transportation courses.

e. Surface Warfare Officers' School (SWOS), Newport RI. SWOS provides ordnance management training for surface warfare officers. Further information can be obtained by calling SWOS at DSN 948-4960/61 or commercial (401) 841-4960/61.

CHAPTER 10.3

Ordnance Training/Qualification/Certification

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CHAPTER 10.3

Ordnance Training/Qualification/Certification

10.3.1 Ordnance Training/Qualification/Certification

10.3.1.1 General. In accordance with the policy set forth in OPNAVINST 8020.14 / MCO 8020.7, activities shall conduct tasks involving ordnance in the safest manner possible and will implement a Qualification/Certification (QUAL/CERT) program as part of an overall Explosives Safety program designed to maximize explosives safety while meeting mission requirements. The results of ordnance mishap investigations have often identified the presence of an individual who was not properly qualified nor certified to perform the assigned task. This fact figured prominently in the assessment of why the incident occurred and how a qualified and certified individual's subsequent actions could have mitigated the degree of damage the incident caused. To fully understand the QUAL/CERT program one must first have an understanding of the two terms.

a. **Qualification.** A documented list of requirements an individual must satisfy prior to being certified, (i.e., testing, formal classes, licenses, documented On-the-Job Training (OJT) and experience, demonstrated task proficiency, physical (medical) examination, etc.).

b. **Certification.** A formal documented declaration by the Commanding Officer/Officer-in-Charge, or their designated representative, that an individual, by virtue of management review, has met all of the qualification requirements established to perform a task.

10.3.1.2 Responsibilities. It is important to understand that although there are many individuals and commands that have responsibilities for QUAL/CERT programs (i.e., training), each Commanding Officer/ Officer-in-Charge is individually responsible for the QUAL/CERT program at their command and all personnel positions which should fall under their program.

10.3.1.3 Governing Instructions. Echelon one and two commands have instructions subordinate to OPNAVINST 8020.14 / MCO 8020.7, which implement the respective Explosives Handling Personnel QUAL/CERT programs.

10.3.2 Personnel Training and Qualification. The training portion(s) of the qualification requirements can be met by a mixture of formal classroom training, computer-based training, correspondence courses, Non-nuclear Ex-

plosive Ordnance Shipboard Handling and Stowage Personnel Qualification Standards (PQS), and OJT. Some formal training class requirements are established by public law as identified in the appropriate process governing instruction(s). Many training courses have been established over the years through the Navy Training Feedback System (NTFS). Except as authorized by OPNAVINST 8020.14 / MCO 8020.7, as applicable, only inert devices shall be used for QUAL/CERT training and examination.

10.3.3 Certification

10.3.3.1 Certification Levels. Although there are some differences between implementing instructions, there are up to five basic certification levels as follows.

- a. Team Member.
- b. Individual.
- c. Team Leader.
- d. Safety Observer.
- e. Instructor.

10.3.3.2 Certification Process. The Commanding Officer/Officer-in-Charge establishes a QUAL/CERT Board which is responsible for defining all parameters of the program, using the requirements established in the appropriate implementing instruction. If the command is too small to properly implement the program, its personnel can be covered in the parent command's QUAL/CERT program. The essential QUAL/CERT program elements are designed to ensure the following.

- a. All ordnance handling tasks are identified.
- b. Training and other qualification requirements for each task are established.
- c. Individuals performing the tasks are properly trained and have met all qualification requirements.
- d. Individuals demonstrate their competency in performing the task before a certified board observer.

e. Board chair grants certification after ensuring that all qualifications have been satisfactorily met.

f. All necessary supporting documentation is maintained in a manner that the activity can readily verify the certification status of each and every individual.

The certification process commences once an individual is identified for assignment to a position/task covered by the command QUAL/CERT program. The individual undergoes the training and other qualification requirements. Upon completion of all qualification requirements, the individual's record is reviewed by the command QUAL/CERT board for certification.

10.3.3.3 Suspension or Revocation. Suspension or revocation action shall be taken by the QUAL/CERT board, as appropriate, following disciplinary action, an explosives mishap, or absence from ordnance task(s) for a specified period of time. As part of the suspension or revocation action, the board should identify if re-certification is possible at a future date and what actions would be required of the individual prior to re-certification.

10.3.3.4 QUAL/CERT Standardization. The implementing instructions have been written to assist commands in utilizing qualified personnel from other commands. This emphasizes the importance of the documentation being maintained so that it can be effectively reviewed in a

short period of time by the requesting command to provide certification for the needed personnel providing the assistance.

10.3.4 Training Program Evaluation and Improvement. To assure the continued currency, relevance, technical accuracy, and adequacy of ordnance training courses, various means of measuring their effectiveness have been implemented. The Chief of Naval Education and Training (CNET) maintains a training appraisal program based on external feedback from all Navy activities to improve the quality of school graduates and, thus, enhance Fleet readiness. Other Military Service schools which provide training to Navy and Marine Corps military and civilian personnel have similar programs. The other major means of program evaluation is a Training Audit Program. Audit teams made up of personnel with the appropriate technical and training expertise conduct periodic audits of individual courses looking at both subject matter content and method of presentation. NAVAMMOLOGCEN is the coordinator for audits of ordnance courses which are not system or process specific. The SYSCOMs, or their designated representatives, are the coordinators for audits of ordnance courses which are system or process specific under their cognizance. It is important that commands with ordnance QUAL/CERT programs be actively involved in the feedback and audit programs to ensure a comprehensive training program that is responsive to the needs of the Fleet.

RECORD OF CHANGES			
CHANGE NO.	DATE	TITLE OR BRIEF DESCRIPTION	ENTERED BY

OPNAVINST 8000.16A

**THE NAVAL ORDNANCE MAINTENANCE
MANAGEMENT PROGRAM (NOMMP)**

**VOLUME IV
APPENDICES/INDEX**



**DEPARTMENT OF THE NAVY
OFFICE OF THE CHIEF OF NAVAL OPERATIONS
WASHINGTON D.C.**

1 JUNE 2001

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APPENDIX A

Air Launched Missile Maintenance, Configuration, and Support Equipment Data Collection

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APPENDIX A

Air Launched Missile and Container Maintenance, Configuration, and Support Equipment Data Collection

A1 Air Launched Missile Maintenance Data

NOTE

a. Maintenance Data Form. Significant air launched missile maintenance actions must be entered into the maintenance data system using OPNAV 8600/11A (maintenance data system for air launched missile systems). OPNAV 8600/11B (Maintenance Data system for Air Launched Missile Containers) Figure A-1 shows the required data elements and the appropriate format for entering air launched missile maintenance data. Figure A-2 shows the required data elements and the appropriate format for entering air launched missile containers maintenance data.

b. Reporting Requirements. All maintenance significant actions that are performed on air launched missile all-up-rounds, sections, components and air-launch missile containers will be reported in the format of OPNAV 8600/11A and OPNAV 8600/11B. Information in the required format will be collected from all activities that perform maintenance on air launched missiles, e.g., naval weapon stations, quality evaluation activities, and naval airborne weapons maintenance units. Maintenance significant actions include the following:

- (1) Test, inspection, or reprogramming of the all-up-round.
- (2) Missile sentencing inspection.
- (3) Disassembly of the all-up-round.
- (4) Assembly of the all-up-round.
- (5) Inspection, test, and repair of any section.
- (6) Inspection and test of any component.
- (7) Removal and installation of any component.
- (8) Performance of all Technical Directives, (This includes AWC, AWB, NARS).
- (9) Accomplishment of container maintenance.

All test set variables data will be downloaded at the end of each month and sent to NAVAIRWARCENWPNDIV Code 362300E. If no missiles were tested during the month, no delivery is required.

c. Reporting Procedures. Maintenance information that describes the same operation performed on a number of similar units may be reported as a summary. Missile sentencing inspections, receipt inspections, and visual tests represent the types of maintenance actions that are suitable for summary reporting. Unit reporting procedures will be used to record a series of maintenance operations to a single unit; a separate reporting document (form) will be used for each unit so reported.

d. Reporting Codes. Reporting codes have been adapted from other data systems and developed locally to assist in entering data into the format of OPNAV 8600/11A and OPNAV 8600/11B. Codes that are used to complete the maintenance data are contained in appendix B. There are some departures from prior codes used for data entry. These codes are noted where they appear in the text.

e. Method of Data Submission. Information contained in the OPNAV 8600/11A and OPNAV 8600/11B is collected and organized into a data system at the central data collection agency, NAVAIRWARCENWPNDIV. The preferred method of data transmittal is via the Source Data Automation Network (SDAN), which allows direct data entry in the format of the OPNAV 8600/11A and OPNAV 8600/11B. Use of the SDAN expedites reporting and improves the accuracy of maintenance data. If facilities or trained personnel are not available to use the SDAN system, data may be submitted by mailing the completed forms to:

Commander
Naval Air Warfare Center Weapons Division
Attn: Code 362300E (AWARS)
575 I Avenue, Suite 1
Point Mugu, CA 93042-5049

*Optional Requirement
OPNAV 8600/11A (REV 03/95)

Figure A-1. Maintenance Data System for Air Launched Missile Systems (OPNAV 8600/11A)

Figure A-2. Maintenance Data System Air Launched Missile Containers (OPNAV 8600/11B)

A1.1 Guidance for filling out OPNAV 8600/11A for Air Launched Missiles are the following:

a. Complete Blocks 1 through 10 to provide essential identification information, the associated Job Control Number (JCN), and labor distribution data according to the following specific instructions.

Block/Data Element Instruction

Record Count. Leave this blank.

Block 1A. UIC (Unit Identification Code). Enter the UIC of reporting activity. See NAVCOMPT Manual NAVSO P-1000-25 for maintenance activity UICs.

Block 1B. Date. Enter the six-digit date (YYMMDD) when the job is assigned. For barcoded missiles this will be assigned automatically.

Block 1C. SER (Serial Number). Enter the locally assigned five-digit number for each separate job. The first two digits of the serial number identifies the missile type; e.g., 02 represents SIDEWINDER; Appendix B provides JCNs by serial number and lead component. For 01 through 09, enter the lead zero. For barcoded missiles this will be assigned automatically.

Block 1D. SUF (Suffix). Enter an alpha-character to identify subjobs under one JCN. If none, enter a dash (-). This field is left blank for barcoded missiles.

NOTE

In Block 1A, the UIC is used to identify maintenance activities or ordnance stock points instead of organization code as was formerly used.

Original Item Configuration

Block 2. Nomenclature. Enter the common language name for the item in maintenance and the common or usual designation, such as MK and MOD or Joint Electronic Type Designation System (JETDS). (See MIL-STD-196C). For barcoded missiles this will be assigned automatically.

Block 3. Part No. Enter the part number of the item in maintenance as it appears on the equipment. For barcoded missiles this block is left blank.

Block 4. Serial No. Enter the serial number of the item in maintenance as it appears on the equipment. For barcoded missiles this is an assigned number for tracking in the database.

NOTE

Include all prefixes, lead zeros, dashes, slant lines, alpha-characters, and suffixes. If the item is an all-up-round, the serial number will correspond to the serial number of the lead component. (See appendix B.)

Block 5. Job Order No./WR No./Ownership. Data entry is used for accounting by job order or work request number and ownership. To record ownership, enter the name of the owning service as Navy, Air Force, Army, or Foreign Military Sales (FMS). In the case of FMS assets, record the country code listed appendix B, figure B-12.

Block 6. Local Use. This space is provided for the discretionary use of the local activity.

Block 7. Units. Enter the number of units being reported.

Block 8. Man-hours. Enter the labor-hours required for the job in hours and tenths of hours.

Block 9. Test Equipment Designation. Enter the missile support equipment designation as it appears on the equipment in the first space in Block 9. If a non-test maintenance action is being reported, enter a dash (-).

Block 10. Test Equipment Serial Number. Enter the corresponding serial number in the first space in Block 10. If more than one test equipment is used, continue to record the corresponding designations and serial numbers in successive spaces. If a non-test maintenance action is being reported, enter a dash (-).

b. Complete Blocks 11 through 25 to provide specific information about the item in maintenance, and the action being reported.

Block/Data Element Instruction

NOTE

The NALC column is not numbered and is provided as an informational block. Entering data in this column is optional.

Block 11. Date. Enter the six-digit date (YYMMDD) when a maintenance action is performed. For barcoded missiles this is assigned automatically.

Block 12. Time of Day. Enter local 24-hour time when a reported maintenance action is performed. For barcoded missiles this is assigned automatically. Care should be taken to scan maintenance actions when they are performed.

Block 13. OPRN. Enter the operation code that identifies the reported maintenance action. Appendix B provides operation codes for reportable maintenance actions.

Block 14. TE BLK LTR. Enter the letter from Block 9 that identifies the test equipment used in a test; no entry required for a non-test maintenance action.

Block 15. Nomenclature. Enter the common name or designation by MK and MOD or JETDS. For barcoded missiles this is assigned automatically.

Block 16. Part No. Enter the part number that identifies the missile, section, or component for which maintenance is reported. Also include spares and repair parts in this block in order to provide the capability to collect failure data for reprovisioning and budgeting.

Block 17. Serial No. Enter the serial number of the item in Block 16 for all tests and inspections and for all items removed or installed.

NOTE

When recording serial numbers, include all prefixes, lead zeros, dashes, slant lines, alpha-characters, and suffixes. For non-serialized units or unreadable serial numbers, enter a dash (-). For non-serial and non-lot number units reported by quantity, enter the number of units.

Block 18. SRCE Code (Source Code). Enter the code that identifies the specific origin of the unit under repair or test. Appendix B provides source codes which describe fleet returned and non-fleet returned assets. For fleet returned assets this code will correspond to the missile sentencing inspection tag (if present).

Block 19. Lot No. Enter the lot number associated with the explosive or propulsion components or sections as recorded on the hardware.

NOTE

When recording lot numbers, include all prefixes, lead zeros, dashes, slant lines, alpha-characters, and suffixes.

Block 20. Test Times. For non-test operations, enter a dash (-) in Block A. For test operations, record the duration of time that external power is applied to the nearest minute in Block A (T1). If the weapon system has an Elapsed Time Indicator (ETI) in Block B (T2), enter the ETI reading at the beginning of the test (hours). In Block C (T3), enter the ETI reading at the completion of tests (hours). Leave Blocks B (T2) and C (T3) blank except as shown below:

HARM:

Block B (T2). Record data for every operation except Remove/Install of Guidance, Warhead or Rocket Motor Sections.

WALLEYE:

Block B (T2). Enter the time that internal power is applied in minutes.

NOTE

Three-character result codes as contained in appendix B will replace the previously used alpha/numeric symbols.

Block 21. Result Code. Enter the test result code using the coding procedures defined in appendix B.

Block 22. Present COND Code (Condition Code). Enter the material condition code of the unit at the time a maintenance action is recorded.

NOTE

The authoritative source of material condition codes is NAVSUP P-724 (NOTAL) with most recent changes. For convenience, material condition codes are included in appendix B with amplification germane to airborne weapons.

Block 23. DISP (Disposition). Enter the reporting code that describes the process for disposition of the missile or section after maintenance. Appendix B provides accurate disposition codes.

Block 24. Technical Directives Applied. Enter the directed airborne weapons changes, airborne weapon bulletins, AWCAP's NAR's or required inspections accomplished or verified during maintenance (i.e., AWB-301, AWC-264). Only one entry allowed per line.

Block 25. Failure Category Codes. Enter an abbreviated failure notation and explain failure symptoms in the narrative section. Appendix B assigns failure codes and provides additional instructions for completing this block.

NOTE

Failure category codes as contained in appendix B will be used in place of the former failure symptom codes that are unique to each missile type.

c. Spaces provided at the bottom of the form are for supplementary narrative. To elaborate on the maintenance information contained in a single line entry in the body of the

form, repeat the date and time entry for that line, then enter the narrative. This will frequently be required to provide sufficient information concerning failure category codes.

A2 Air Launched Missile Container Maintenance Data

A2.1 Guidance for filling out OPNAV 8600/11B for containers are as follows:

- a. Record count leave this space blank.

NOTE

Blocks 1A through 1D (Action activity job control number (JCN) identification).

- a. **Block 1A. UIC (Unit Identification Code).** Enter the UIC of reporting activity See NAVCOMPT Manual NAVSO P-1000-25 for maintenance activity UICs.

- b. **Block 1B. Date.** Enter the six digit date (YYMMDD) when the job is assigned.

- c. **Block 1C. SER (Serial Number).** Enter the locally assigned five digit number for each separate job. The first two digits of the serial number identifies the missile type; e.g. 07 represents HARPOON/SLAM; Appendix B provides JCNs by serial number. For 01 through 09, enter the lead zero.

- d. **Block 1D. SUF (Suffix).** Enter an alpha character to identify subjobs under one JCN. If none, enter a dash (-).

- e. **Block 2. Nomenclature.** Enter the common language name ((i. e.) (Container) for the item in maintenance and the common or usual designation ((e.g.) MK and MOD or CNU).

- f. **Block 3. Part No.** Enter the part number of the container in maintenance as it appears on the container.

- g. **Block 4. Serial No.** Enter the serial number of the container in maintenance as it appears on the container or enter "BATCH" when reporting multiple container serial numbers on any one form.

- h. **Block 5. Job Order No./WR No./Ownership.** Data entry is used for accounting by job order or work request number and ownership. To record ownership, enter the name of the owning service as Navy, Air Force, or Foreign Military Sales (FMS). In the case of FMS assets, record the country code listed in Appendix B, Figure B-12.

- i. **Block 6. NALC.** Enter the NALC of the empty container(s) if known.

- j. **Block 7. Man-hours.** Enter the labor hours required to perform the jobs described on the form in hours and tenths of hours.

- k. **Block 8. Condition Code.** For each container reported on the form (maximum 3 containers serial numbers perform), enter the container serial number, the starting container condition code ((i.e.) prior to performance of maintenance actions), the ending container condition code (after all maintenance actions reported are complete) and the container disposition code.

- l. **Block 9. Date.** Enter the six-digit (YYMMDD) when each maintenance action is performed on the container.

- m. **Block 10. Cntr.** Enter the container (A, B, or C from Block 8) that each maintenance action is being performed on.

- n. **Block 11. Line Item.** Enter a sequential line number for each maintenance action performed starting with 001 (e.g. 001, 002, 003...).

- o. **Block 12. Maintenance Action Performed.** Enter an "X" in the appropriate box for parts replacement (REPL), subassembly/component repair (RPR), or the number of a Technical Directive (TD) accomplished.

- p. **Block 13. Nomenclature.** Enter the item name of the subassembly or component being replaced or repaired.

- q. **Block 14. Part Number.** Enter the part number of the subassembly/component being replaced or repaired.

- r. **Block 15. Qty** Enter the quantity of the component/subassembly being replaced or repaired.

- s. **Block 16. Repair.** Enter an "X" in the appropriate box for the type of repair performed (i.e. WELD, PATCH, PAINT, or OTHER). If "OTHER", expand upon the type of repair performed in the narrative block at the bottom of the form. Also, enter the area/zone of the subassembly/component undergoing repair (e.g. "Fwd left corner", "Left Side", "Fwd Cross Member", etc.). Again, utilize the narrative block at the bottom of the form to expand upon the area/zone of the repair.

- t. **Block 17. Test Results.** Enter a "P" for Pass or "F" for fail for all applicable container test (i.e.) LEAK Test, End Lift (MK 45 Hand truck Bracket) Strength Test, Hoist Ring, Strength Test, or Center Lift Strength Test) performed as the result of the maintenance action (s).

u. **Narrative.** Spaces provided at the bottom of the form are for supplementary narrative. This space should be used to elaborate on container repairs that don't fall under Weld, Patch or Paint; to elaborate on the area/zone of a specific subassembly/component requiring repair; or to expand upon failure symptoms noted during maintenance. Each narrative should be tied to a maintenance action entered on the form above via the Date and Line Item blocks.

A3 Air Launched Missile Configuration Data

a. Configuration Summary Form. When significant air launched missile maintenance actions have been performed, the resulting configuration changes must be reported to the maintenance data system using the applicable maintenance data system configuration summary. Separate preprinted forms apply for each missile type. Figures A-3 through A-15 show the required data elements and the appropriate format for entering configuration data.

b. Reporting Requirements. All maintenance actions that result in a change to the all-up-round configuration require that an updated configuration summary be provided to enter current information into the data base. In addition, a copy of the updated configuration summary must be retained with the missile logbook. Information will be collected from the maintenance activities performing such maintenance.

c. Method of Data Submission. Information contained on the configuration summary is collected and organized into a data system at NAVAIRWARCENWPNDIV. The preferred method of data transmittal is via the SDAN, which allows direct data entry in the format of the applicable configuration summary form. Use of the SDAN expedites reporting and improves the accuracy of maintenance data. If facilities and/or trained personnel are not available to use the SDAN system, data may be submitted by mailing the completed forms to:

Commander
Naval Air Warfare Center Weapons Division
Attn: Code 362300E (AWARS)
575 I Avenue, Suite 1
Point Mugu, CA 93042-5049

Whether the data is transmitted via SDAN or sent through the mail, a copy of the completed configuration summary must accompany the all-up-round with the missile logbook.

NOTE

All barcoded missiles with the exception of SIDEWINDER and SIDEARM have their Configuration Summary Form (CSF) generated automatically from the maintenance data collected on the maintenance data form and the last known configuration from AWARS.

d. Complete Blocks 1 through 15 on the particular Configuration Summary Form (CSF) that corresponds to the configuration item. Weapon types are identified by their common names in large bold letters in the upper right-hand corner of the forms. Header information in this section contains identification data and accounting information for the all-up-round configuration being reported.

Block/Data Element Instruction

Block 1. Nomenclature. Enter the complete and specific designation of the all-up-round. For barcoded missiles this will be assigned automatically.

Block 2. Part No. Enter the part number of the all-up-round that is listed in Block 1.

Block 3. Serial No. Enter the serial number of the all-up-round just as it appears on the equipment.

MAINTENANCE DATA SYSTEM - CONFIGURATION SUMMARY					1. NOMENCLATURE HARM		
2. PART NO.		3. SERIAL NO.		4. NALC	5. UIC/CAGE	6. JOB ORDER/PROD WORK AUTH	7. COUNTRY CODE
8. WAIVERS				9. CONFIGURATION DATE-TIME (YYMMDD) - (HHMM)		10. MAINTENANCE DUE DATE (YYMMDD)	
11. DO NOT ISSUE AFTER DATE (YYMMDD)		12. LAST SYS TEST DATE (YYMMDD)		13. INSPECTOR	STAMP	14. TLM CODE	15. COND CODE
16. LOCAL USE							
17. NOMENCLATURE	18. MK MOD/ DESIGNATOR	19. PART NUMBER	20. SERIAL NUMBER	21. LOT NUMBER	22. LOAD CURE/MFG DATE (YYMMDD)	23. WARR EXP DATE (YYMMDD)	
GUIDANCE SECTION							
RADOME							
CONTROL SECTION							
TARGET DETECTOR							
BATTERY							
WING DAMPER 1/3							
WING DAMPER 2/4							
UMBILICAL							
TELEMETRY SECTION							
WARHEAD SECTION							
FUZE							
FUZE BOOSTER							
WARHEAD CABLE							
CAPTIVE FLT/WARHEAD							
ROCKET MOTOR							
IGNITER/SAFE & ARM ASSY							
CAPTIVE FLT ROCKET MOTOR							
WING							
WING							
WING							
WING							
FIN							
FIN							
FIN							
FIN							
CONTAINER							
ELAPSED TIME INDICATOR READING							
24. GUIDANCE SECTION METER (MFG Use Only)				25. CONTROL SECTION METER (MFG Use Only)		26. CAPTIVE FLIGHT METER	
_____ HRS _____ PHASE				_____ HRS		_____ HRS	
ALTERATIONS/TECHNICAL DIRECTIVES							
NOMENCLATURE	PART NUMBER	ALT/TECH. DIR. PERFORMED					

OPNAV 8600/1 (REV 03-95) (FRONT)

Figure A-3. HARM Configuration Summary/Log Sheet (OPNAV 8600/1)

HARM MISSILE LOG SHEET				A. MISSILE DESIGNATOR	B. SERIAL NUMBER	C. PART NUMBER
1. DATE (MM/DD/YY)	2. ACTIVI- TY UIC	3. OPERATION/ EVENT	4. TEST/INSP. RESULT (PASS/FAIL)	5. CAPTIVEFLIGHT MISSILE READY TIME	6. TECH DIR MOD INCORPORATED	7. REMARKS

The HARM Missile Log Sheet is to be completed in accordance with the instructions printed on the inside of the HARM Configuration and Operating Log Folder. Intermediate Level Maintenance activities shall enter receipt of a Fleet-Return Missile, copy all Missile Log Sheets and forward to AWARS. When the missile is expended in any manner, this should be indicated on the HARM Missile Log Sheet and the entire Missile Log Folder should be forwarded to: Commander, Naval Air Warfare Center Weapons Division, Attn: Code 362300E (AWARS), 575 I Avenue, Suite 1, Point Mugu, CA 93042-5049.

OPNAV 8600/1 (REV 03-95) (BACK)

Figure A-3. HARM Configuration Summary/Log Sheet (OPNAV 8600/1) (Cont'd)

MAVERICK MISSILE LOG SHEET				A. MISSILE DESIGNATOR	B. SERIAL NUMBER	C. PART NUMBER
1. DATE (MM/DD/YY)	2. ACTIVI- TY UIC	3. OPERATION/ EVENT	4. TEST/INSP. RESULT (PASS/FAIL)	5. CAPTIVEFLIGHT MISSILE READY TIME	6. TECH DIR MOD INCORPORATED	7. REMARKS

The MAVERICK Missile Log Sheet is to be completed in accordance with the instructions printed on the inside of the MAVERICK Configuration and Operating Log Folder. Intermediate Level Maintenance activities shall enter receipt of a Fleet-Return Missile, copy all Missile Log Sheets and forward to AWARS. When the missile is expended in any manner, this should be indicated on the MAVERICK Missile Log Sheet and the entire Missile Log Folder should be forwarded to: Commander, Naval Air Warfare Center Weapons Division, Attn: Code 362300E (AWARS), 575 I Avenue, Suite 1, Point Mugu, CA 93042-5049.

OPNAV 8600/2 (REV 03-95) (BACK)

Figure A-4. MAVERICK Configuration Summary/Log Sheet (OPNAV 8600/2) (Cont'd)

SIDEARM MISSILE LOG SHEET				A. MISSILE DESIGNATOR	B. SERIAL NUMBER	C. PART NUMBER
1. DATE (MM/DD/YY)	2. ACTIVI- TY UIC	3. OPERATION/ EVENT	4. TEST/INSP. RESULT (PASS/FAIL)	5. CAPTIVEFLIGHT MISSILE READY TIME	6. TECH DIR MOD INCORPORATED	7. REMARKS

The SIDEARM Missile Log Sheet is to be completed in accordance with the instructions printed on the inside of the SIDEARM Configuration and Operating Log Folder. Intermediate Level Maintenance activities shall enter receipt of a Fleet-Return Missile, copy all Missile Log Sheets and forward to AWARS. When the missile is expended in any manner, this should be indicated on the SIDEARM Missile Log Sheet and the entire Missile Log Folder should be forwarded to: Commander, Naval Air Warfare Center Weapons Division, Attn: Code 362300E (AWARS), 575 I Avenue, Suite 1, Point Mugu, CA 93042-5049.

Figure A-5. SIDEARM Configuration Summary/Log Sheet (OPNAV 8600/4) (Cont'd)

MAINTENANCE DATA SYSTEM - CONFIGURATION SUMMARY					1. NOMENCLATURE HARPOON		(BODY)		
2. PART NO.		3. SERIAL NO.		4. NALC	5. UIC	6. JOB ORDER/PROD WORK AUTH		7. COUNTRY CODE	
8. WAIVERS				9. CONFIGURATION DATE-TIME (YYMMDD) - (HHMM)			10. MAINTENANCE DUE DATE (YYMMDD)		
11. DO NOT ISSUE AFTER DATE (YYMMDD)		12. LAST SYS TEST DATE (YYMMDD)		13. INSPECTOR STAMP		14. TLM CODE		15. COND CODE	
16. LOCAL USE									
17. NOMENCLATURE		18. MK MOD DESIG.	19. PART NUMBER		20. SERIAL NUMBER		21. LOT NUMBER	22. LOAD CURE/MFG DATE (YYMMDD)	23. WARR EXP DATE (YYMMDD)
GUIDANCE SECTION									
TARGET SEEKER									
RADOME									
MIDCOURSE GUIDANCE UNIT									
ATTITUDE REFERENCE ASSEMBLY									
DIGITAL COMPUTER/POWER SUPPLY									
RADAR ALTIMETER									
POWER CONVERTER									
WARHEAD/EXERCISE SECTION									
PRESSURE PROBE									
CRUSH SENSOR PROBE RH									
CRUSH SENSOR PROBE LH									
SAFETY AND ARM DEVICE/CONTACT FUZE									
BOOSTER FUZE									
TELEMETRY TRAY (XSECT)									
FLIGHT TRAY (XSECT)									
COVER (XSECT)									
COVER (XSECT)									
SUSTAINER SECTION									
FUEL LOT #1 (MFG)									
FUEL LOT #2 (LOAD)									
COVER									
COVER									
COVER									
FAIRING									
COVER									
COVER									
TURBOJET ENGINE									
FUZE CONTROL ELECTRONICS									

OPNAV 8600/5 (REV 03-95) (Page 1)

Figure A-6. HARPOON Configuration Summary/Log Sheet (OPNAV 8600/5)

MAINTENANCE DATA SYSTEM - HARPOON (BODY)			NOMENCLATURE			SERIAL NO.	
17. NOMENCLATURE	18. MK MOD/ DESIG.	19. PART NUMBER	20. SERIAL NUMBER	21. LOT NUMBER	22. LOAD CURE/MFG DATE (YYMMDD)	23. WARR EXP DATE (YYMMDD)	
INITIATOR, DUAL BRIDGEWIRE							
ENGINE START CARTRIDGE							
ENGINE START CARTRIDGE							
IGNITER							
IGNITER							
PUMP VALVE RESISTOR #1							
PUMP VALVE RESISTOR #2							
BATTERY PRIMARY							
ELECTRONIC CONTROL AMPLIFIER							
PYRO REPAY PANEL							
BLEED AIR VALVE							
INITIATOR, DUAL BRIDGEWIRE							
FUEL CONTROL VALVE							
INITIATOR, DUAL BRIDGEWIRE							
INITIATOR, DUAL BRIDGEWIRE							
START TANK VALVE							
INITIATOR, DUAL BRIDGEWIRE							
CONTROL SECTION (BOATAIL)							
CONTROL ACTUATOR NO. 1							
CONTROL ACTUATOR NO. 2							
CONTROL ACTUATOR NO. 3							
CONTROL ACTUATOR NO. 4							
CONTAINER							
TURBO JET ENGINE BEARING OIL RESERVOIR READINGS		24. OIL LEVEL _____ CC		26 DATE OF CHECK (YYMMDD)			
ALTERATIONS/TECHNICAL DIRECTIVES							
NOMENCLATURE	PART NUMBER	ALT/TECH. DIR. PERFORMED					

Figure A-6. HARPOON Configuration Summary/Log Sheet (OPNAV 8600/5) (Cont'd)

MAINTENANCE DATA SYSTEM - CONFIGURATION SUMMARY					1. NOMENCLATURE HARPOON		(AUR)	
2. PART NO.		3. SERIAL NO.		4. NALC	5. UIC	6. JOB ORDER/PROD WORK AUTH		7. COUNTRY CODE
8. WAIVERS				9. CONFIGURATION DATE-TIME (YYMMDD) - (HHMM)			10. MAINTENANCE DUE DATE (YYMMDD)	
11. DO NOT ISSUE AFTER DATE (YYMMDD)		12. LAST SYS TEST DATE (YYMMDD)		13. INSPECTOR STAMP		14. TLM CODE		15. COND CODE
16. LOCAL USE								
17. NOMENCLATURE		18. MK MOD/DESIG.	19. PART NUMBER	20. SERIAL NUMBER		21. LOT NUMBER	22. LOAD CURE/MFG DATE (YYMMDD)	23. WARR EXP DATE (YYMMDD)
BOOSTER ROCKET MOTOR SECTION								
ROCKET MOTOR ASSEMBLY								
IGNITER								
ARM/FIRE DEVICE								
INITIATOR								
INITIATOR								
LAUNCH KIT, MISSILE								
INITIATOR, DUAL BRIDGEWIRE (ALL CONFIGURATIONS)								
INITIATOR, DUAL BRIDGEWIRE (ALL CONFIGURATIONS)								
INITIATOR, DUAL BRIDGEWIRE (TARTAR ONLY)								
INITIATOR, DUAL BRIDGEWIRE (TARTAR ONLY)								
INITIATOR, DUAL BRIDGEWIRE (TARTAR ONLY)								
INITIATOR, DUAL BRIDGEWIRE (TARTAR ONLY)								
EXPLOSIVE BOLT								
EXPLOSIVE BOLT								
PLATE ELECTRIC COVER								
WING ASSY, LOWER RIGHT (TARTAR ONLY)								
WING ASSY, LOWER LEFT (TARTAR ONLY)								
WING ASSY, UPPER LEFT (TARTAR ONLY)								
WING ASSY (CAP/CAN ONLY)								
WING ASSY (CAP/CAN ONLY)								
WING ASSY (CAP/CAN ONLY)								
WING ASSY (CAP/CAN ONLY)								
WING ROOT FITTING - UPPER (AIR ONLY)								
WING ROOT FITTING - UPPER (AIR ONLY)								
WING ROOT FITTING - LOWER (AIR ONLY)								
WING ROOT FITTING - LOWER (AIR ONLY)								
WING ROOT FITTING - UPPER (AIR ONLY)								
WING ROOT FITTING - UPPER (AIR ONLY)								
WING ROOT FITTING - LOWER (AIR ONLY)								
WING ROOT FITTING - LOWER (AIR ONLY)								

OPNAV 8600/5 (REV 03-95) (Page 3)

Figure A-6. HARPOON Configuration Summary/Log Sheet (OPNAV 8600/5) (Cont'd)

MAINTENANCE DATA SYSTEM - HARPOON (AUR)		NOMENCLATURE			SERIAL NO.	
17. NOMENCLATURE	18. MK MOD/ DESIGNATOR	19. PART NUMBER	20. SERIAL NUMBER	21. LOT NUMBER	22. LOAD CURE/MFG DATE (YYMMDD)	23. WARR EXP DATE (YYMMDD)
FIN ASSY (ALL)						
FIN ASSY (TARTAR ONLY)						
FAIRING TOE (CAP/CAN ONLY)						
FAIRING HEEL(CAP/CAN ONLY)						
COVER, ACCESS (AIR ONLY)						
SUPPORT, FORWARD (TARTAR ONLY)						
LAUNCH SHOE ASSY (CAP/CAN ONLY)						
COVER ASSY INLET (TARTAR ONLY)						
CANISTER						
SUPPORT KIT						
EXPLOSIVE BOLT						
EXPLOSIVE BOLT (TWC ONLY)						
INITIATOR						
INITIATOR (TWC ONLY)						
CONTAINER						
FLIGHT PLUG (WIRED/UNWIRED)						
CAPSULE ASSEMBLY						
NOSE CAP ASSEMBLY						
NOSE CAP ROCKET MOTOR						
DETONATING CORD (SHIELDED MOLD)						
DETONATING CORD (SHIELDED MOLD)						
DETONATING CORD (SHIELDED MOLD)						
DETONATING CORD (SHIELDED MOLD)						
EXPLOSIVE BOLT						
EXPLOSIVE BOLT						
ALTERATIONS/TECHNICAL DIRECTIVES						
NOMENCLATURE	PART NUMBER	ALT/TECH. DIR. PERFORMED				

OPNAV 8600/5 (REV 03-95) (Page 4)

Figure A-6. HARPOON Configuration Summary/Log Sheet (OPNAV 8600/5) (Cont'd)

MAINTENANCE DATA SYSTEM - HARPOON (AUR)			NOMENCLATURE			SERIAL NO.		
17. NOMENCLATURE	18. MK MOD/ DESIGNATOR	19. PART NUMBER	20. SERIAL NUMBER	21. LOT NUMBER	22. LOAD CURE/MFG DATE (YYMMDD)	23. WARR EXP DATE (YYMMDD)		
DETONATOR								
DETONATOR								
INITIATOR DUAL BRIDGEWIRE								
INITIATOR DUAL BRIDGEWIRE								
CAPSULE MAIN BODY								
DETONATING CORD (SHIELDED MILD)								
DETONATING CORD (SHIELDED MILD)								
DETONATING CORD (SHIELDED MILD)								
DETONATING CORD (FLEX CONFINED)								
DETONATING CORD (FLEX CONFINED)								
DETONATING CORD (FLEX CONFINED)								
EXPLOSIVE BOLT								
EXPLOSIVE BOLT								
EXPLOSIVE BOLT								
EXPLOSIVE BOLT								
EXPLOSIVE BOLT								
CAPSULE AFT BODY								
INITIATOR, DUAL BRIDGEWIRE								
INITIATOR, DUAL BRIDGEWIRE								
INITIATOR, DUAL BRIDGEWIRE								
INITIATOR, DUAL BRIDGEWIRE								
DETONATOR								
DETONATOR								
N ₂ SUPPLY								
INITIATOR, DUAL BRIDGEWIRE								
INITIATOR, DUAL BRIDGEWIRE								
N ₂ SUPPLY (UK ONLY)								
ALTERATIONS/TECHNICAL DIRECTIVES								
NOMENCLATURE	PART NUMBER	ALT/TECH. DIR. PERFORMED						

Figure A-6. HARPOON Configuration Summary/Log Sheet (OPNAV 8600/5) (Cont'd)

HARPOON MISSILE LOG SHEET				A. MISSILE DESIGNATOR	B. SERIAL NUMBER	C. PART NUMBER
1. DATE (MM/DD/YY)	2. ACTIVI- TY UIC	3. OPERATION/ EVENT	4. TEST/INSP. RESULT (PASS/FAIL)	5. CAPTIVEFLIGHT MISSILE READY TIME	6. TECH DIR MOD INCORPORATED	7. REMARKS

The HARPOON Missile Log Sheet is to be completed in accordance with the instructions printed on the inside of the HARPOON Configuration and Operating Log Folder. Intermediate Level Maintenance activities shall enter receipt of a Fleet-Return Missile, copy all Missile Log Sheets and forward to AWARS. When the missile is expended in any manner, this should be indicated on the HARPOON Missile Log Sheet and the entire Missile Log Folder should be forwarded to: Commander, Naval Air Warfare Center Weapons Division, Attn: Code 362300E (AWARS), 575 I Avenue, Suite 1, Point Mugu, CA 93042-5049.

Figure A-6. HARPOON Configuration Summary/Log Sheet (OPNAV 8600/5) (Cont'd)

FLEET CONFIGURATION SUMMARY		HARPOON/SLAM/SLAM ER MISSILE		1. DATE PREPARED	
2. NOMENCLATURE MK/MOD HARPOON/SLAM/SLAM ER _____ -84 _____ - _____		3. PART NUMBER			
4. SERIAL NUMBER		5. NALC		6. ORG CODE/UIC	
7. WAIVERS					
8. MDD		9. EQUIPMENT FREQUENCY CODE		10. TLM CODE	11. CONDITION CODE
12. INSPECTOR				INSPECTOR STAMP	
NOMENCLATURE	PART NUMBER	SERIAL NUMBER	LOT NUMBER		
GUIDANCE SECTION					
TARGET SEEKER					
MIDCOURSE GUIDANCE UNIT (DOES NOT APPLY TO SLAM ER)					
GUIDANCE NAVIGATION UNIT (SLAM ER ONLY)					
WARHEAD/EXERCISE SECTION					
FUZE, BOOSTER					
TELEMETRY TRAY (XSECT)					
FLIGHT TRAY (XSECT)					
SUSTAINER SECTION					
FUEL (LOT #1/MFG)					
FUEL (LOT #2/LOAD)					
ENGINE					
CONTROL SECTION (BOATTAIL)					
LAUNCH KIT MISSILE					
WING ASSY (HARPOON ONLY)					
WING ASSY (HARPOON ONLY)					
WING ASSY (HARPOON ONLY)					
WING ASSY (HARPOON/SLAM ONLY)					
WING RIGHT HAND (SLAM ER ONLY)					
WING LEFT HAND (SLAM ER ONLY)					
FIN ASSY					
FIN ASSY					
FIN ASSY					
FIN ASSY					
BOOSTER, ROCKET MOTOR (HARPOON ONLY)					
CAPSULE ASSEMBLY (HARPOON ONLY)					
CANISTER ASSEMBLY (HARPOON ONLY)					
NOMENCLATURE	PART NUMBER	ALTERATIONS/TECHNICAL DIRECTIVES APPLIED			

OPNAV 8600/16 (REV 03-95) (FRONT)

Figure A-7. HARPOON/SLAM/SLAM ER Configuration Summary/Log Sheet (OPNAV 8600/16)

[illegible]

The HARPOON/SLAM/SLAM ER Missile Log Sheet is to be completed in accordance with the instructions printed on the inside of the HARPOON/SLAM Configuration and Operating Log Folder. Intermediate Level Maintenance activities shall enter receipt of a Fleet-Return Missile, copy all Missile Log Sheets and forward to AWARS. When the missile is expended in any manner, this should be indicated on the HARPOON/SLAM/SLAM ER Missile Log Sheet and the entire Missile Log Folder should be forwarded to: Commander, Naval Air Warfare Center Weapons Division, Attn: Code 362300E (AWARS), 575 I Avenue, Suite 1, Point Mugu, CA 93042-5049.

OPNAV 8600/16 (REV 03-95) (BACK)

Figure A-7. HARPOON/SLAM/SLAMER Configuration Summary/Log Sheet (OPNAV 8600/16) (Cont'd)

[illegible]

Figure A-8. WALLEYE Configuration Summary/Log Sheet (OPNAV 8600/6)

[illegible]

OPNAV 8600/6 (REV 03-95) (BACK)

Figure A-8. WALLEYE Configuration Summary/Log Sheet (OPNAV 8600/6) (Cont'd)

[illegible]

Figure A-9. SIDEWINDER Configuration Summary/Log Sheet (OPNAV 8600/8)

SIDEWINDER MISSILE LOG SHEET				A. MISSILE DESIGNATOR	B. SERIAL NUMBER	C. PART NUMBER
1. DATE (MM/DD/YY)	2. ACTIVI- TY UIC	3. OPERATION/ EVENT	4. TEST/INSP. RESULT (PASS/FAIL)	5. CAPTIVEFLIGHT MISSILE READY TIME	6. TECH DIR MOD INCORPORATED	7. REMARKS

The SIDEWINDER Missile Log Sheet is to be completed in accordance with the instructions printed on the inside of the SIDEWINDER Configuration and Operating Log Folder. Intermediate Level Maintenance activities shall enter receipt of a Fleet-Return Missile, copy all Missile Log Sheets and forward to AWARS. When the missile is expended in any manner, this should be indicated on the SIDEWINDER Missile Log Sheet and the entire Missile Log Folder should be forwarded to: Commander, Naval Air Warfare Center Weapons Division, Attn: Code 362300E (AWARS), 575 I Avenue, Suite 1, Point Mugu, CA 93042-5049.

OPNAV 8600/8 (REV 03-95) (BACK)

Figure A-9. SIDEWINDER Configuration Summary/Log Sheet (OPNAV 8600/8) (Cont'd)

MAINTENANCE DATA SYSTEM - CONFIGURATION SUMMARY					1. NOMENCLATURE PHOENIX	
2. PART NO.	3. SERIAL NO.	4. NALC	5. UIC	6. JOB ORDER/PROD WORK AUTH	7. COUNTRY CODE	
8. WAIVERS		9. CONFIGURATION DATE-TIME (YYMMDD) - (HHMM)			10. MAINTENANCE DUE DATE (YYMMDD)	
11. DO NOT ISSUE AFTER DATE (YYMMDD)	12. LAST SYS TEST DATE (YYMMDD)	13. INSPECTOR	STAMP	14. TLM CODE	15. COND CODE	
16. LOCAL USE						
17. NOMENCLATURE	18. MK MOD/ DESIGNATOR	19. PART NUMBER	20. SERIAL NUMBER	21. LOT NUMBER	22. LOAD CURE/MFG DATE (YYMMDD)	23. WARR EXP DATE (YYMMDD)
GUIDANCE SECTION						
RATE SENSOR -54A						
INERTIAL SENSOR ASSY -54C						
ARMAMENT SECTION						
WARHEAD						
FUZE -54A						
BOOSTER FUZE						
EXPLOSIVE LEAD						
TARGET DETECTING DEVICE						
ELECTRONIC ASSY						
ANTENNA TDD -54A						
ANTENNA TDD -54A						
ANTENNA TDD -54A						
ANTENNA TDD -54A						
TELEMETRY SECTION						
PROPULSION SECTION						
ROCKET MOTOR						
IGNITER SAFETY MECHANISM						
FUZE -54C						
CONTROL SECTION						
REAR RF MIXER						
CONTAINER						
ALTERATIONS/TECHNICAL DIRECTIVES						
NOMENCLATURE	PART NUMBER	ALT/TECH. DIR. PERFORMED				

OPNAV 8600/9 (REV 03-95) (FRONT)

Figure A-10. PHOENIX Configuration Summary/Log Sheet (OPNAV 8600/9)

PHOENIX MISSILE LOG SHEET				A. MISSILE DESIGNATOR	B. SERIAL NUMBER	C. PART NUMBER
1. DATE (MM/DD/YY)	2. ACTIVI- TY UIC	3. OPERATION/ EVENT	4. TEST/INSP. RESULT (PASS/FAIL)	5. CAPTIVEFLIGHT MISSILE READY TIME	6. TECH DIR MOD INCORPORATED	7. REMARKS

The PHOENIX Missile Log Sheet is to be completed in accordance with the instructions printed on the inside of the PHOENIX Configuration and Operating Log Folder. Intermediate Level Maintenance activities shall enter receipt of a Fleet-Return Missile, copy all Missile Log Sheets and forward to AWARS. When the missile is expended in any manner, this should be indicated on the PHOENIX Missile Log Sheet and the entire Missile Log Folder should be forwarded to: Commander, Naval Air Warfare Center Weapons Division, Attn: Code 362300E (AWARS), 575 I Avenue, Suite 1, Point Mugu, CA 93042-5049.

OPNAV 8600/9 (REV 03-95) (BACK)

Figure A-10. PHOENIX Configuration Summary/Log Sheet (OPNAV 8600/9) (Cont'd)

[illegible]

Figure A-11. SPARROW Configuration Summary/Log Sheet (OPNAV 8600/10)

[illegible]

Figure A-11. SPARROW Configuration Summary/Log Sheet (OPNAV 8600/10) (Cont'd)

[illegible]

Figure A-12. AMRAAM Configuration Summary/Log Sheet (OPNAV 8600/13)

AMRAAM MISSILE LOG SHEET				A. MISSILE DESIGNATOR	B. SERIAL NUMBER	C. PART NUMBER
1. DATE (MM/DD/YY)	2. ACTIVI- TY UIC	3. OPERATION/ EVENT	4. TEST/INSP. RESULT (PASS/FAIL)	5. CAPTIVEFLIGHT MISSILE READY TIME	6. TECH DIR MOD INCORPORATED	7. REMARKS

The AMRAAM Missile Log Sheet is to be completed in accordance with the instructions printed on the inside of the AMRAAM Configuration and Operating Log Folder. Intermediate Level Maintenance activities shall enter receipt of a Fleet-Return Missile, copy all Missile Log Sheets and forward to AWARS. When the missile is expended in any manner, this should be indicated on the AMRAAM Missile Log Sheet and the entire Missile Log Folder should be forwarded to: Commander, Naval Air Warfare Center Weapons Division, Attn: Code 362300E (AWARS), 575 I Avenue, Suite 1, Point Mugu, CA 93042-5049.

Figure A-12. AMRAAM Configuration Summary/Log Sheet (OPNAV 8600/13) (Cont'd)

PENGUIN MISSILE LOG SHEET				A. MISSILE DESIGNATOR	B. SERIAL NUMBER	C. PART NUMBER
1. DATE (MM/DD/YY)	2. ACTIVI- TY UIC	3. OPERATION/ EVENT	4. TEST/INSPECTION RESULT (PASS/FAIL)	5. CAPTIVEFLIGHT MISSILE READY TIME	6. TECH DIR MOD INCORPORATED	7. REMARKS

The PENGUIN Missile Log Sheet is to be completed in accordance with the instructions printed on the inside of the PENGUIN Configuration and Operating Log Folder. Intermediate Level Maintenance activities shall enter receipt of a Fleet-Return Missile, copy all Missile Log Sheets and forward to AWARS. When the missile is expended in any manner, this should be indicated on the PENGUIN Missile Log Sheet and the entire Missile Log Folder should be forwarded to: Commander, Naval Air Warfare Center Weapons Division, Attn: Code 362300E (AWARS), 575 I Avenue, Suite 1, Point Mugu, CA 93042-5049.

Figure A-13. PENGUIN Configuration Summary/Log Sheet (OPNAV 8600/14) (Cont'd)

[illegible]

OPNAV 8600/18 (REV 09-99)

Figure A-14. JSOW Configuration Summary/Log Sheet (OPNAV 8600/18)

NOTE

Include all prefixes, lead zeros, dashes, slant lines, alpha-characters, and suffixes. The all-up-round serial number will correspond to the serial number of the lead component. (See appendix B.)

Block 4. NALC (Navy Ammunition Logistics Code). Enter the NALC for the assembled weapon. (See NAVSUP PUB-724. For barcoded missiles this is assigned automatically.

Block 5. UIC. Enter the UIC of the reporting activity. See appendix B or NAVCOMPT Manual NAVSO P-1000-25 for maintenance activity UICs. For barcoded missiles this is assigned automatically.

Block 6. Job Order/Prod. Work Auth. Cite the accounting job order number and production work authorization from local documentation.

Block 7. Country Code. Enter the two-character code that identifies the country of ownership or interservice accountability for the weapon. For convenience the applicable codes are included in appendix B. See figure B-12.

Block 8. Waivers. List all approved waivers by reference to request for deviation or request for waiver for the weapon.

Block 9. Configuration Date-Time. Enter the six-digit date (YYMMDD) and 24-hour time that the final configuration was completed.

Block 10. Maintenance Due Date (MDD). Enter the six-digit date (YYMMDD) that represents expiration of the routine maintenance cycle.

Block 11. Do-Not-Issue After Date. Enter the six-digit date (YYMMDD) after which there is insufficient service time remaining to justify issuing the weapon. Appendix D provides Serviceable in-Service Time (SIST) limitations for each weapon.

Block 12. Last System Test Date. Enter the six-digit date (YYMMDD) of the last all-up-round test.

Block 13. Inspector Stamp. Mark this record with a quality assurance stamp after final inspections. The quality assurance inspection initials are optional.

Block 14. Telemetry (TLM) Code. For exercise or training rounds and tactical missiles with telemetry, enter the code letter if known; otherwise enter the operating frequency of the telemeter in megahertz (MHz), e.g., TLM Code A or 2212.5 MHz.

Block 15. Cond Code. Enter the material condition code for the all-up-round in its final configuration.

NOTE

The authoritative source of material condition codes is NAVSUPINST P-724 (NOTAL) with most recent changes. For convenience, material condition codes are included in appendix B with amplification germane to airborne weapons.

Block 16. Local Use. This space is provided for the discretionary use of the local activity.

e. Complete Blocks 17 through 23 to provide specific information on sections, major subassemblies, and components that comprise the final configuration of the all-up-round. For each missile type, the configuration items are listed on separate preprinted forms.

NOTE

Shaded areas of forms require no entries

Block/Data Element Instruction

Block 17. Nomenclature. The critical items are listed in this preprinted block by plain language name. Subassemblies are grouped under the next higher assemblies. Blank lines are provided for components not listed. For barcoded missiles this is assigned automatically.

Block 18. MK-MOD Designator. Enter the MK and MOD if applicable or other common designation for the corresponding items in Block 17. For barcoded missiles this is assigned automatically.

Block 19. Part No. Enter the part number as it appears on the equipment for the item in Block 17.

Block 20. Serial No. Enter the serial number of the item listed in Block 17 as it appears on the equipment.

NOTE

Include all prefixes, lead zeros, dashes, slant lines, alpha-characters, and suffixes.

The all-up-round serial number will correspond to the serial number of the lead component. (See appendix B.)

Block 21. Lot Number. Enter the lot number associated with the explosives or propulsion components or sections as recorded on the hardware.

NOTE

When recording lot numbers, include all prefixes, lead zeros, dashes, slant lines, alpha-characters and suffixes. Where lot number data does not apply, the spaces have been filled with crosshatch.

Block 22. Load Cure/Mfg. Date. In the spaces provided, enter the date(s) as they appear on the items in Block 17: manufacturing date, or the load/cure date for explosive and propellant material.

Block 23. Warr. Exp. Date. In the space provided, enter the expiration date (YYMMDD) of the warranty for the item listed in Block 17.

NOTE

Translate the dates for block 23 as they appear into the year-month-day format (i.e. 870803). Where month or day does not appear, enter zeros for the missing month/day (i.e. 870000 or 860200).

f. Additional data is required for the unique requirements for the HARM missile and HARPOON missile body configurations only. The configuration summaries for these items require that data be entered as follows:

HARM Missile ETI Reading

Block 24. Guidance Section Meter. Information to be provided by the manufacturer only.

Block 25. Control Section Meter. Information to be provided by the manufacturer only (inside meter).

Block 26. Captive Flight Meter. Enter the time in hours that is indicated by the captive flight meter at the time of final configuration (outside meter only).

HARPOON Missile Body

Block 24. Oil Level. Record the oil level (cc) at the turbojet engine bearing oil reservoir.

Block 25. Date of Check. Enter the date of the oil level check in YYMMDD format.

g. Each type of configuration summary provides data blocks for listing any alterations or technical directives that affect the configuration history. Enter the following data for each change (airborne weapon change) and inspection (airborne weapon bulletin) accomplished or verified:

Block 17. Nomenclature. Select the appropriate nomenclature. If the item does not appear in the preprinted list, use a common, plain language name.

Block 19. Part Number. Enter the part number that is associated with the item.

Alt/Tech Directive Performed. Enter the numbers assigned by airborne weapon change or airborne weapon bulletin for the items listed in this section.

NOTE

The combined short OPNAV 8600/16 HARPOON/SLAM/SLAM ER CSF was created to cut down on the size of the log books for the HARPOON, SLAM, and SLAM ER missiles. This is the only missile configuration to be put in the HARPOON, SLAM and SLAM ER missile log books. The standard five-page OPNAV 8600/5 HARPOON CSF will still need to be filled out. Sub-launched HARPOON missiles may require the full five-page configuration form. The five-page configuration forms are for local use and must be sent to NAVAIRWARECENWPNDIV PT. MUGU CA. (Code 362300E) as you are now presently doing for inclusion into the Airborne Weapons Analysis and Reporting System (AWARS) database. As barcode data collection is instituted for HARPOON, SLAM and SLAM ER missiles at the Shore Maintenance Activities, the new OPNAV 8600/16 HARPOON/SLAM/SLAM ER short form will be automatically generated and printed from the information collected on the five-page OPNAV 8600/5 HARPOON CSF. HARPOON Exercise missiles require the full 5-page CSF in the logbook.

A4 Support Equipment Maintenance Data

a. Maintenance Data Form. Maintenance and calibration actions performed on automatic test equipment at the naval weapons stations or naval airborne weapons maintenance units are also entered into a common data base. Figure A-16 depicts OPNAV 8600/12 (maintenance data system air launched missile systems test equipment), which includes

the required data elements and the appropriate format for entering support equipment maintenance data. Data is to be entered in the format of OPNAV 8600/12 for all general purpose and peculiar test equipment used for maintenance of air launched missiles.

b. Reporting Requirements. All maintenance significant actions that are performed on air launched missile test equipment will be reported in the format of OPNAV 8600/12. Maintenance actions include the following:

- (1) Periodic test and inspection.
- (2) Troubleshooting and repair.
- (3) Replacement of components.
- (4) Calibration and alignment.
- (5) Accomplishment of any technical directive.

c. Method of Data Submission. Information contained in the OPNAV 8600/12 is collected and organized into a data system at NAVAIRWARCENWPNDIV. The preferred method of data transmittal is via the SDAN, which allows direct data entry in the format of the OPNAV 8600/12. Use of the SDAN expedites reporting and improves the accuracy of maintenance data. If facilities and/or trained personnel are not available to use the SDAN system, data may be submitted by mailing the completed forms to:

Commander
Naval Air Warfare Center Weapons Division
Attn: Code 362300E (AWARS)
575 I Avenue, Suite 1
Point Mugu, CA 93042-5049

d. Complete Blocks 1 through 6 to identify the specific test equipment being reported and to provide job accounting data.

Block/Data Element Instruction

Record Count. Leave this blank.

Block 1. Action Activity JCN. Enter the 17-digit alpha/numeric identification as follows:

Block 1A. UIC. Enter the five-digit UIC of the reporting activity. See appendix B or NAVCOMPT Manual NAVSO P-1000-25 for maintenance activity UICs.

Block 1B. Date. Enter the six-digit date (YYMMDD) when job is assigned.

Block 1C. SER (Serial Number). Enter the locally assigned five-digit number for each separate job. The first digit of the serial number will always be 01 to indicate a test equipment maintenance action.

Block 1D. SUF (Suffix). Enter an alpha-character to identify subjobs under one JCN. If none, enter a dash (-).

NOTE

In Block 1A the UIC is used to identify maintenance activities or ordnance stock points instead of organizational code as was formerly used.

Block 2. Nomenclature. Identify the test equipment as listed in the nomenclature table in volume IV, appendix B.

Block 3. Part Number. Enter the part number of the test equipment as it appears on the identification decal or custody record.

Block 4. Serial No. Enter the test equipment as it appears in the equipment records.

NOTE

Includes all prefixes, lead zeros, dashes, slant lines, alpha-characters, and suffixes.

Block 5. Local Use. This space provided for the discretionary use of the local activity.

Block 6. Job Order No./WR No./Ownership. Enter the data for accounting by job order or work request number and ownership. To record ownership, enter the name of the owning service as Navy, Air Force, or Army, or identify ownership as FMS. In the case of FMS assets, do not record the FMS case number. See NAVSUP Publication 409, Inventory Segmentation.

[illegible]

* Optional Requirement
OPNAV 8600/12 (1/93)

Figure A-15. Maintenance Data System Air Launched Missile Systems Test Equipment (OPNAV 8600/12)

e. Complete Blocks 7 through 19 to record information on each maintenance and calibration action performed on the item of test equipment identified in Block 2.

Block/Data Element Instruction

Block 7. START OPRN. In Block 1A, enter the (YYMMDD). In Block 1B, enter the 24-hour time of day that maintenance began.

Block 8. OPRN (Operation). Enter the operation code that identifies the reported maintenance action. Appendix B provides operation codes for reportable maintenance actions.

Block 9. Nomenclature. Enter the common plain language name that identifies the assembly, subassembly, or component involved in the maintenance action.

Block 10. Part No. Enter the part number of the item identified in Block 9 as it appears on the equipment or as listed in the Illustrated Parts Breakdown.

Block 11. Serial No. Enter the serial number of the item in Block 9 for all tests, inspections, and for all items removed or installed. Use separate line entries to record removal and installation.

NOTE

When recording serial numbers, include all prefixes, lead zeros, dashes, slant lines, alpha-characters, and suffixes. For non-serialized units or unreadable serial numbers, enter a dash (-).

Block 12. SRCE Code (Source Code). Enter the code that identifies the specific origin of replacement parts used in maintenance. Volume IV Appendix B provides applicable source codes.

Block 13. FSCM/CAGE. Enter the Federal Supply Code for Manufactures for the item identified in Block 9. (See DLA Cataloging Handbook H4/H8, Commercial and Government Entity (CAGE) Sections A and B.)

Block 14. OPRN TIME/Man-hours. Enter the total time required in hours and tenths of hours to accomplish the operation identified in Block 8.

Block 15. Result. Enter the reporting code that corresponds to the result of inspection. Volume IV, Appendix B provides test and inspection result codes.

Block 16. Status. Enter the reporting code that indicates the status of the test equipment at the completion of the operation reported in Block 8.

Block 17. Present Condition Code. Entry of data is not required.

Block 18. DISP (Disposition). Enter the reporting code that describes the process for disposition of items of support test equipment after maintenance. Volume IV, appendix B provides applicable disposition codes.

Block 19. Failure Category Codes/(Defect Codes). Enter an abbreviated failure notation and explain failure symptoms in the narrative section. (See Failure Category Codes volume IV, appendix B.

f. Spaces provided at the bottom of the form are for supplementary narrative. To elaborate on the maintenance information contained in a single line entry in the body of the form, repeat the date and time entry for that line, then enter the narrative. Do not repeat the information that is provided in the data fields in the narrative block. This space provides up to 25 characters of information. For example, if the test equipment fails self test then annotate the program reference number (s) that fails. Do not record failed P-codes in this block.

A5 Maintenance Data Reports at Naval Aviation Depots and Commercial Contractors

a. Maintenance Reporting. Information that describes maintenance and repair performed at organic depots and commercial contractors is collected into a common data base for air launched missiles. The contractors' existing data collection, analysis, and corrective action systems shall be used with modification only as necessary to meet the requirements specified by the central data collection agency.

NOTE

For the purposes of this instruction, no distinction will be made between commercial depots and government-operated activities undertaking performance of a task (organic depots). References to contractor facilities and formats will apply equally to all air launched missile maintenance depots. The requirements set forth in this paragraph are based on not yet approved Data Item Descriptions (DID) and apply to government-operated depots. These requirements are provisional to commercial depot activities and are dependent upon the approval of an updated DID DI-R-21598.

b. Reporting Requirements. All maintenance and repair of repairables accomplished during rework at naval aviation depots and commercial contractors shall be documented to an extent and in such a manner that:

(1) The installation, removal, and final disposition of material is both traceable and accountable.

(2) Records are maintained as a result of changes that occur in configuration, nomenclature, status, or condition of all-up-rounds, air launched missile components (including support equipment and containers), and rework material.

(3) Conditions that existed during test are documented and test results are recorded.

(4) Results of analyses or engineering investigations are summarized and engineering data is available that supports recommendations and corrective actions taken.

c. Reporting Procedures. Maintenance data will be provided individually for each item in rework; that is, unit reporting procedures will be used versus "BATCH" reporting procedures. To the maximum extent practical, the data will be recorded in a magnetic tape medium. The recording format and other characteristics will be determined by the contractor and coordinated with the central data collection agency. Data recorded on magnetic tape must be accompanied by a complete file description and a partial listing of the data as follows:

- (1) Recording density (9-track/6250 bpi preferred).
- (2) Character set (ASCII preferred).
- (3) Parity option.
- (4) Character and word length.
- (5) Record and block length.

In addition to a file description, a partial listing of the data contained on each tape along with identification of field headers using descriptive names is required to be provided. Coordination with the central data collection agency is a prerequisite to ensure compatibility for data transfer. Any subsequent changes in file structure or recording characteristics require prior concurrence of the central data collection agency.

d. Reporting Codes. Common reporting codes used to enter data into the data base from intermediate and organiza-

tional level maintenance activities are contained in appendix B. In most cases these codes will be suitable for depot level reporting as well.

Reporting codes that are unique to depot activities and are recommended to supplement appendix B are included in this appendix.

e. Method of Data Submission. Maintenance and configuration data will be collected and integrated with similar data from other maintenance activities and user organizations. Data is to be submitted by mailing all record material to:

Commander
Naval Air Warfare Center Weapons Division
Attn: Code 362300E (AWARS)
575 I Avenue, Suite 1
Point Mugu, CA 93042-5049

Data shall be submitted routinely on a monthly basis and shall include all maintenance data up to 5 (working) days prior to submission.

f. The following conventions are to be observed for submitting maintenance and configuration data:

(1) Part/Serial/Lot numbers. Enter all prefixes, lead zeros, dashes, slant lines, alpha-characters, and suffixes.

(2) Date. Enter calendar dates in year-month-day (YYMMDD) numeric format.

(3) Time. Enter interval times in hour and tenths-of-hour (hh.h) format with expressed decimal.

(4) Mandatory entry. For each element, enter the data item specified or enter a common abbreviation that indicates the following:

UNK Unknown

N/A Not applicable

DNO Did not occur

(5) Symbols. Use the plain English equivalent for algebraic symbols associated with data elements:

(+) plus,

(-) minus,

(°) degree, etc.

(6) Precision. Do not truncate data elements. Express all decimals.

g. Provide data specified in this section for all maintenance, rework, refurbishment, and modification of air launched missiles and components. These requirements are consistent with DID DI-ILSS-XXXXX (to be developed) and con to the preparation instructions for the DID (DD 1664 section 10). Figure A-17 is a representation of the data elements required to be reported during maintenance keyed by paragraph number to the DID preparation instructions. Figure A-18 is an excerpt from a DID and is used in conjunction with figure A-17.

h. Provide records of test parameter data that is recorded in the course of ordinary testing during maintenance or in the course of conducting extraordinary tests during engineering investigations. Test variables data collected during maintenance or engineering investigation shall be consistent in scope, format, and content with similar data provided during production and acceptance testing as specified in DID DI-T21244A and revisions thereto. These data records will provide an engineering data base to support corrective action decisions and to correlate with production data in support of quality assurance efforts. Data will be provided in the contractors' format. Specific test parameters will be determined by the contractors and coordinated with the central data collection agency to be consistent with baseline production test variables data and with data base file structures to facilitate the retrieval and analysis of engineering data.

A6 As-Built Configuration List

NOTE

Acquisition Reform allows commercial contractors to retain the as-built configuration list at the manufacture. This information does not have to be deliverable but has to be available to government agencies.

a. Information that describes the current configuration of air launched missiles, air launched missile components (including spares, support equipment, and containers)

and rework material is maintained in a common data base integrated with maintenance data. Beginning with the original configuration of material provided by the contractor, supplied by a vendor, or government furnished, the configuration status is continuously updated during subsequent maintenance and modification, or in the case of drawings and software, during subsequent revisions. The original configuration data is supplied as a required contract deliverable in accordance with DID DD 1664, DI-ILSS-YYYYY (to be developed) As-Built Configuration List (ABCL) data. The ABCL is the baseline for configuration accounting of all air launched missile configuration items in the life cycle of the weapon. Therefore, although the ABCL is a production data requirement, it is necessary that the data collection be consistent with maintenance and configuration data collection procedures for in-service material. The contractors' existing procedures shall be used to provide ABCL data that represents the delivered configuration of air launched missile material.

b. The ABCL shall consist of part numbers, serial numbers, nomenclature, level of indenture with next higher assembly (hardware only), date of manufacture (YYMMDD), lot numbers (when applicable), approved changes (Class I and Class II), deviations and waivers to the technical data baseline, grain or batch numbers (when applicable), subcontract numbers or vendor contract numbers (when applicable), and a certified statement that the above information describes the serialized or lot-identified item delivered for all contractor, contractor-required vendor, and government-furnished material serialized or lot-identified items. The government-furnished material serialization may be limited to the "as received" assembly condition.

c. The data will be recorded in a magnetic tape medium and a complete file description and a partial listing of the data contained on the tape must be provided. Coordination with the central data collection agency is a prerequisite to ensure compatibility for data transfer. Any subsequent changes in file structure or recording characteristics require prior concurrence of the central data collection agency.

d. The ABCL data is to be submitted in accordance with guidance provided in contract documents and coordinated with the agent for maintenance data collection as provided in this instruction.

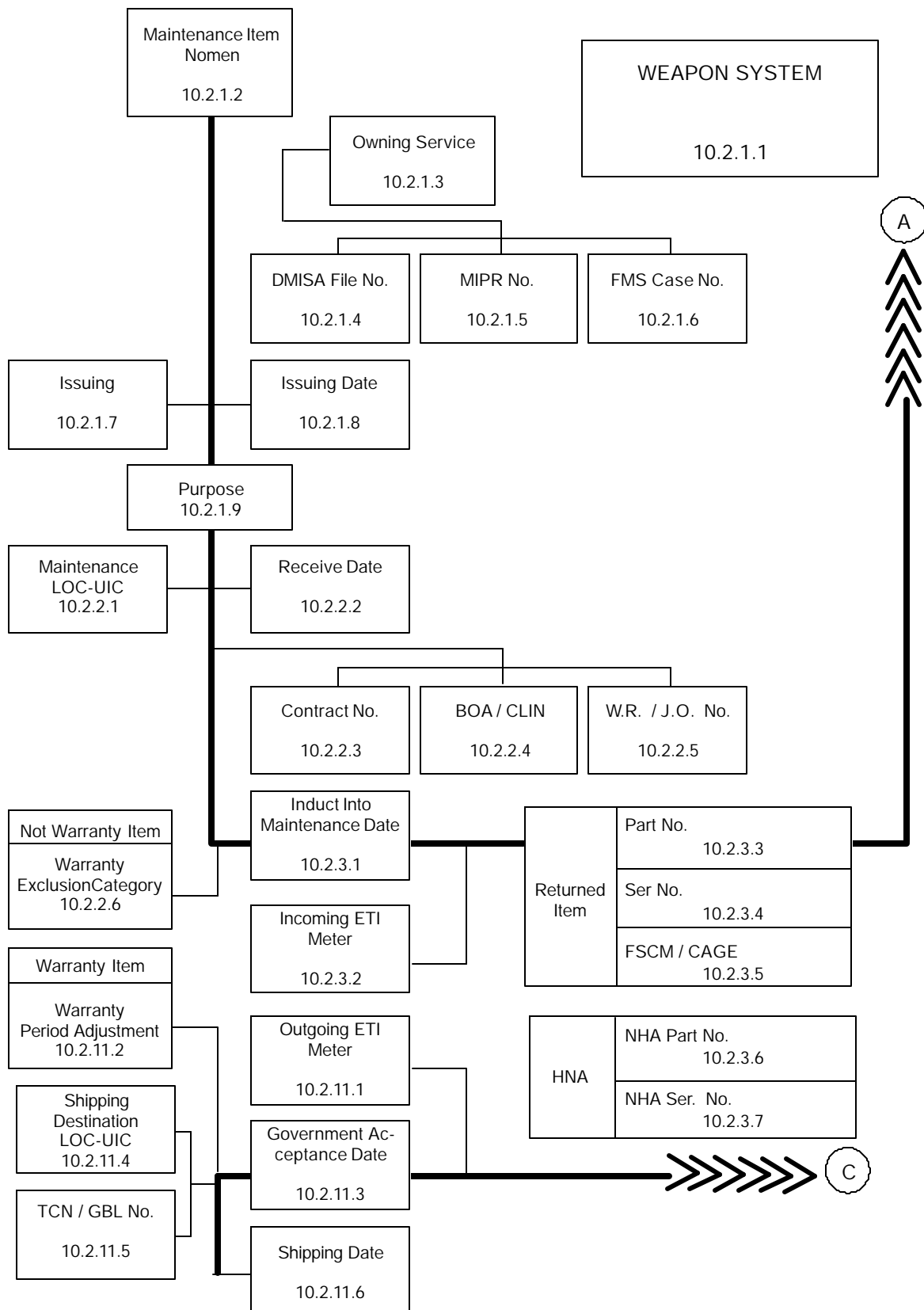


Figure A-16. Depot Maintenance Data Collection

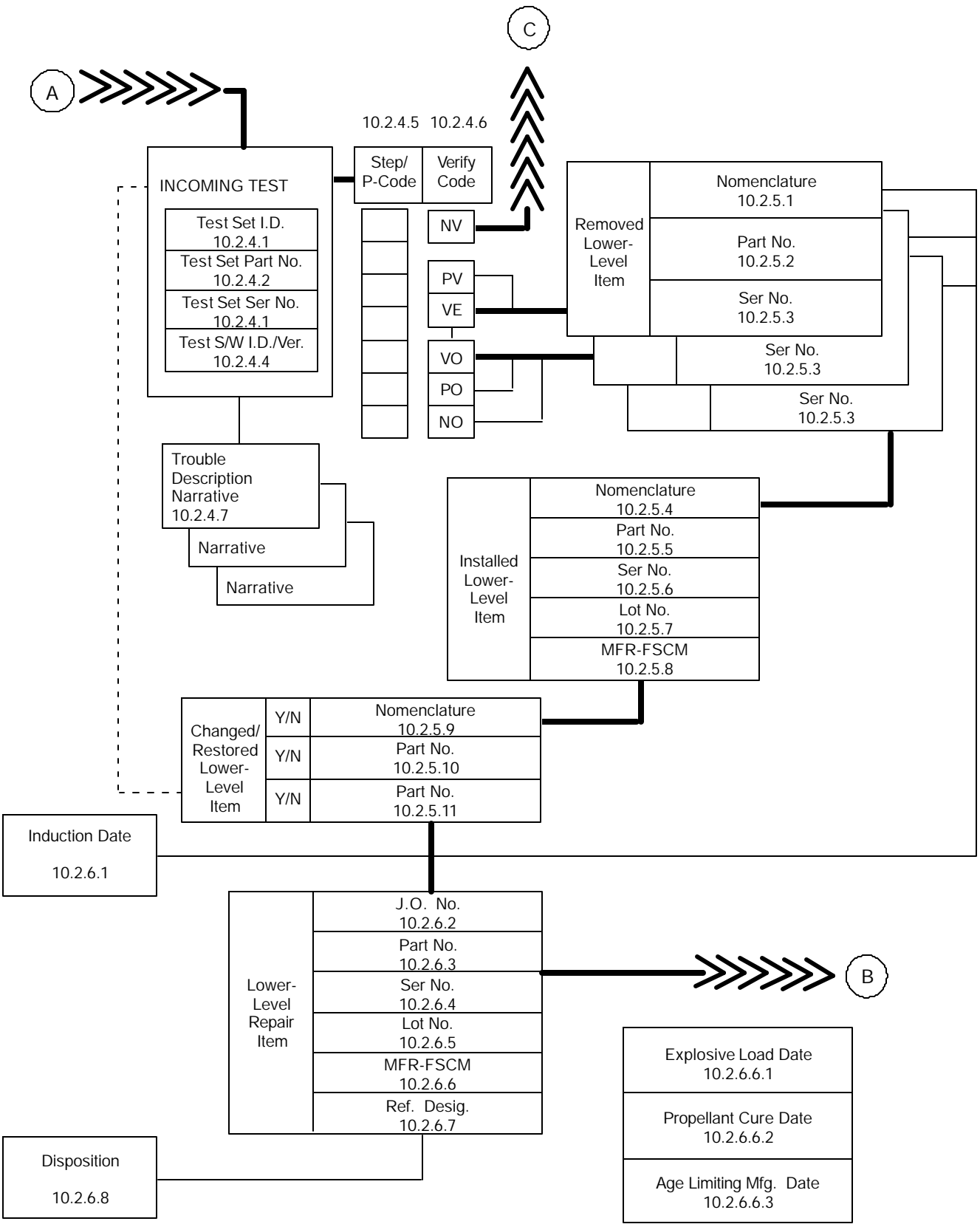


Figure A-16. Depot Maintenance Data Collection (Cont'd)

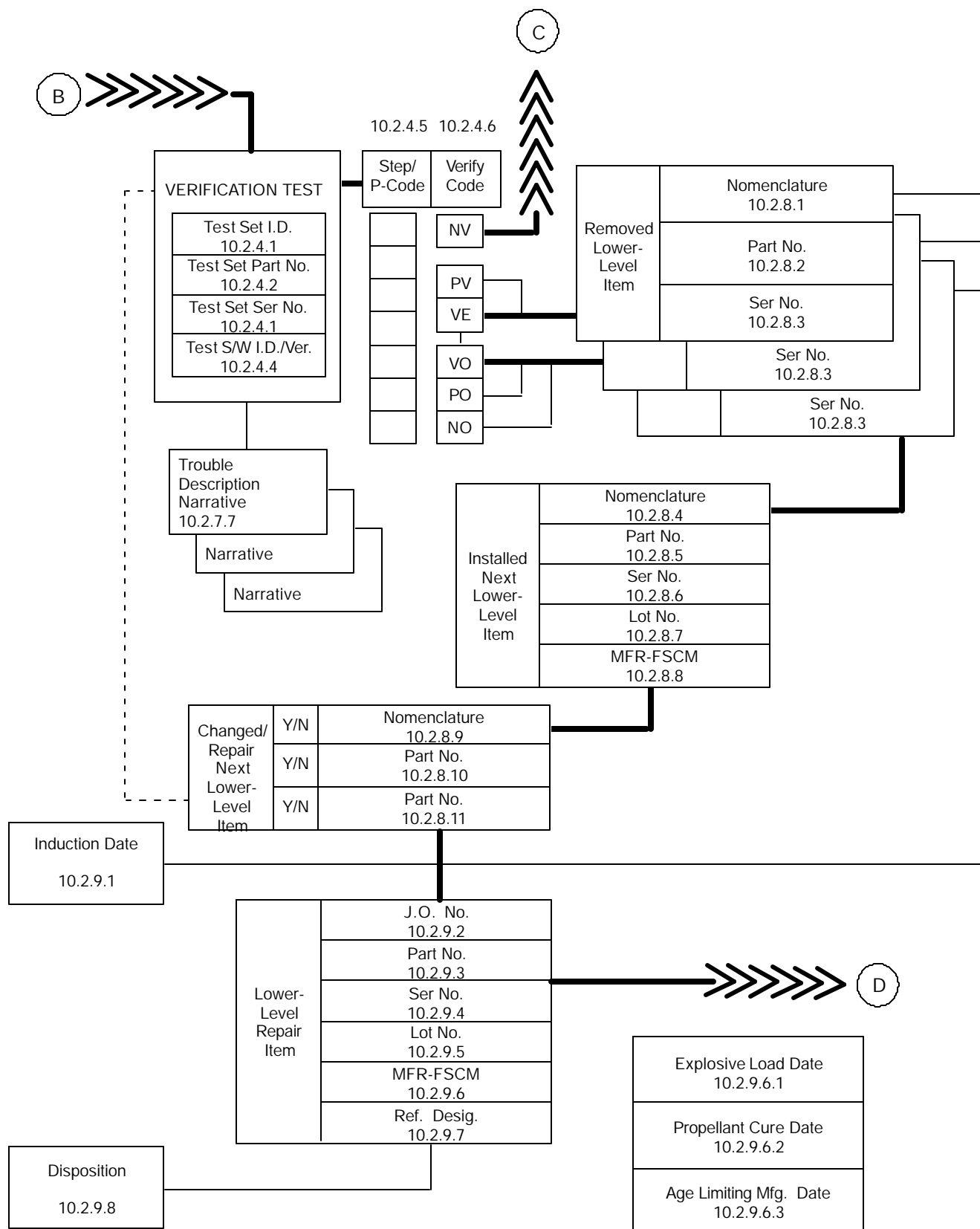


Figure A-16. Depot Maintenance Data Collection (Cont'd)

10.2.1	Enter data to identify the source of material returned for depot rework and reference information pertinent to ownership responsibility and authority for maintenance.	
10.2.1.1	WEAPON SYSTEM	The common name and designation of the top-level system of which the returned material is a component or part (e.g. HARPOON, AGM-84D).
10.2.1.2	MAINTENANCE ITEM NOMEN	The common nomenclature used to describe the material (item) returned for rework (e.g. guidance section).
10.2.1.3	OWNING SERVICE	Army (A), Marine Corps (MC), Navy (N), Air Force (AF), or Foreign Military Sales (FMS).
10.2.1.4	DMISA FILE NO.	Depot maintenance interservice support agreement containing information for rework or other support that is accomplished in a service from the owning service.
10.2.1.5	MIPR NO.	Military interdepartmental procurement request that contains information for rework funded under this document for maintenance costs reimbursable to the performing service depot.
10.2.1.6	FMS CASE NO.	Foreign military sales information (including country code) that identifies ownership, authorization, and appropriation data for material released under the security assistance plan.
10.2.1.7	ISSUING ACT LOC-UIC	Name of the activity with custody of the material being returned for depot maintenance, and the unit identification code of that activity. In the usual case this will be a coastal naval weapons station or naval air station returning intermediate BCM material for depot rework.
10.2.1.8	ISSUE DATE	Date the material is released by the issuing activity for shipment to a depot.
10.2.1.9	PURPOSE	Repair, refurbish, modify, etc. The reason for the return of material should be identified in documentation that accompanies the returned item; field failures should be noted, and engineering changes or TDs that require depot modifications should be identified by numbered bulletin, change notice, etc.
10.2.2	Enter data that identifies the receipt of material for depot maintenance and the contractual documents that contain authorization and appropriation data and terms and conditions of repair, rework, or modification.	
10.2.2.1	MAINTENANCE LOC-UIC	Name of the activity that receives the material for depot maintenance and the unit identification code of the activity (e.g. Anniston Army Ammunition Depot-66163).
10.2.2.2	RECEIVED DATE	Date the material was received at the maintenance location.

Figure A-17. Excerpt from Data Item Description

10.2.2.3	CONTRACT NO.	Identifies the contract that contains terms and conditions under which maintenance will be accomplished.
10.2.2.4	BOA/CLIN	Identifies the basic ordering agreement under which the contracting officer can authorize maintenance and repair. Further identifies the individual contract line item (number) for the specific repair.
10.2.2.5	W.R./J.O. NO.	Identifies the work request document that contains authorization and appropriation data for maintenance in organic depots, and locally assigned job order number.
10.2.2.6	NOT WARRANTY ITEM WARRANTY EXCLUSION CATEGORY	A statement of conditions or circumstances (category) believed to apply to the material returned for repair that would render the maintenance excludable from the terms of the contract warranty clause.
10.2.3	Enter data that identifies the configuration of the material returned for maintenance, and the next higher assembly identification, if known. Record the date of induction and elapsed operating time monitored in the item, if applicable.	
10.2.3.1	INDUCT INTO MAINT- DATE	Date the returned material is inducted for depot maintenance. This should correspond to the date in CAIMS files that material condition code is changed from D, E, or F to condition code M as reported via the ammunition transaction report.
10.2.3.2	INCOMING ETI METER	Cumulative operating time recorded from the elapsed time indicator at the time the returned item is inducted for maintenance.
10.2.3.3	RETURNED ITEM PART NO.	The part number as it appears on the item returned for maintenance.
<p style="text-align: center;">NOTE</p> <p>Here and in subsequent sections that require identification of a configuration item by part number, serial number, lot number, drawing number, etc, include all prefixes, lead zeros, dashes, slant lines, alpha-characters, and suffixes.</p>		
10.2.3.4	RETURNED ITEM SER. NO.	The serial number that appears on the item returned for maintenance.
10.2.3.5	RETURNED ITEM FSCM/ CAGE	The Federal Supply Code for Manufacturers (FSCM) or the Commercial and Government Entity (CAGE); a code that identifies the manufacturer or supplier of the item returned for maintenance.

Figure A-17. Excerpt from Data Item Description (Cont'd)

10.2.3.6	NHA PART NO.	The part number for the next higher assembly of which the item returned for maintenance comprised a section, subassembly, etc.
10.2.3.7	NHA SER NO.	The serial number of the next higher assembly from which the item returned for maintenance was removed, if known.
10.2.4	Enter data that documents the results of incoming test of the material returned for maintenance and verification of previously reported failure conditions.	
10.2.4.1	TEST SET I.D.	The common name and type designation of test equipment used for incoming test and verification of the item returned for depot maintenance. (e.g. HARPOON MSTs, AN/DSM-127).
10.2.4.2	TEST SET PART NO.	The part number of the test set used for incoming test of the returned item.
10.2.4.3	TEST SET SER. NO.	The serial number of the test set used for incoming test of the returned item.
10.2.4.4	TEST S/W I.D./REV	The common name or mnemonic that identifies the test software and revision used for incoming test of the returned item.
10.2.4.5	STEP/P-CODE	Test parameter codes (test step numbers, P-codes) that identify parameter(s) out of specification.
10.2.4.6	VERIFY CODE	Codes that establish correlation with reported field failures; not verified (NV), verified exactly (VE), or partially verified (PV); also verified with other failures noted (VO), partially verified with other failures noted (PO), and not verified, but other failures noted (NO).
10.2.4.7	TROUBLE DESCRIPTION NARRATIVE	A narrative discussion of failure or problem symptoms noted during test. Include, as appropriate, measured parameter values, specification or other "should be" values, environmental conditions and pertinent observations.
10.2.5	Enter data that specifically identifies the lower level item(s) that are replaced or repaired in the material returned for maintenance to restore the original item to serviceable condition and RFI status.	
10.2.8.1	REMOVED LOWER LEVEL ITEM NOMENCLATURE	The common name or plain English description of the lower level item removed from the returned item in the course of normal maintenance.
10.2.8.2	REMOVED LOWER LEVEL ITEM PART NO.	Part number of the item identified in paragraph 10.2.8.1.

Figure A-17. Excerpt from Data Item Description (Cont'd)

10.2.8.3	REMOVED LOWER LEVEL ITEM SER. NO.	Serial number of the item identified in paragraph 10.2.8.1.
10.2.8.4	INSTALLED LOWER LEVEL ITEM NOMEN- CLATURE	Common name of the item installed to replace the item removed for maintenance, or installed without removal.
10.2.8.5	INSTALLED LOWER LEVEL ITEM PART NO.	Part number of the item identified in paragraph 10.2.8.4.
10.2.8.6	INSTALLED LOWER LEVEL ITEM SER. NO.	Serial number of the item identified in paragraph 10.2.8.4 (for serialized parts).
10.2.8.7	INSTALLED LOWER LEVEL ITEM LOT NO.	Lot number of the item identified in paragraph 10.2.8.4 (for non-serialized parts).
10.2.8.8	INSTALLED LOWER LEVEL ITEM MFR FSCM	Name of the manufacturer or supplier of the item identified in paragraph 10.2.8.4. Also the FSCM or CAGE number for the named manufacturer or supplier.
10.2.8.9	RESTORED/CHG LOWER LEVEL ITEM Y/N NOMENCLATURE	The common name of the item identified in paragraph 10.2.8.1 after maintenance. Indicate whether the nomenclature for the restored item is different (Y/N) from the removed item.
10.2.8.10	RESTORED/CHG LOWER LEVEL ITEM Y/N PART NO.	Part number of the item identified in paragraph 10.2.8.9. Indicate whether this part number is different (Y/N) from paragraph 10.2.8.2.
10.2.8.11	RESTORED/CHG LOWER LEVEL ITEM Y/N SER. NO.	Serial number of the item identified in paragraph 10.2.8.9. Indicate whether this serial number is different (Y/N) from paragraph 10.2.8.3.
10.2.6	Enter data that identifies the maintenance and repair of a removed item at the next lower level of indenture.	
10.2.6.1	LOWER LEVEL REPAIR ITEM INDUCTION DATE	Date that repair begins on a lower level item that exhibits a verified failure or problem in incoming tests.
10.2.6.2	LOWER LEVEL REPAIR ITEM J.O. NO.	The locally assigned job order number used to account for costs associated with repair of the item.
10.2.6.3	LOWER LEVEL REPAIR ITEM PART NO.	Part number of the lower level item inducted for maintenance. This should be the same as paragraph 10.2.8.2 or 10.2.8.10.
10.2.6.4	LOWER LEVEL REPAIR SER. NO.	Serial number of the lower level item inducted for maintenance. This should be the same as paragraph 10.2.8.3 or 10.2.8.11.

Figure A-17. Excerpt from Data Item Description (Cont'd)

10.2.6.5	LOWER LEVEL REPAIR ITEM LOT NO.	Lot number of the lower level item inducted for maintenance, if applicable.
10.2.6.6	LOWER LEVEL REPAIR ITEM MFR-FSCM	Name of the manufacturer or supplier of the lower level item inducted for maintenance. Also the FSCM or CAGE number for the named manufacturer or supplier.
10.2.6.6.1	EXPLOSIVE LOAD DATE	The beginning date for determining age related time limits for items that contain explosive material (DD 1650 BLOCK 12).
10.2.6.6.2	PROPELLANT CURE DATE	The beginning date for determining age related time limits for items that contain deflagrating material, e.g., propellant grain (DD 1650 BLOCK 12).
10.2.6.6.3	AGE LIMITING MFG DATE	Manufacturing date for determining age related serviceable in-service time limits for items that do not contain volatile material.
10.2.6.7	REF DESIG	A unique drawing reference designator or circuit symbol that identifies the item inducted for maintenance, and relates the specific item to a next-higher assembly indenture level (e.g. A1CR101).
10.2.6.8	DISPOSITION	The nonspecific destination of the lower level repair item beyond this level of maintenance (e.g. calibration, return to OEM, etc.).
10.2.7	Enter data that applies to tests that are performed to verify failures or problems requiring maintenance at the next lower level of indenture.	
10.2.7.1	TEST SET I.D.	The common name and type designation of test equipment used to identify and isolate failures or problems associated with the lower level indenture of the item in paragraph 10.2.6.
10.2.7.2	TEST SET PART NO.	The part number of the test equipment identified in paragraph 10.2.7.1.
10.2.7.3	TEST SET SER. NO.	The serial number of the test equipment identified in paragraph 10.2.7.1.
10.2.7.4	TEST S/W I.D./REV	The common name or mnemonic that identifies the test software and revision used during verification tests.
10.2.7.5	STEP/P-CODE	Test parameter codes (test step numbers, P-codes) that are relative to specific test stimulus and response measurements, or parameters that are out of specification.

Figure A-17. Excerpt from Data Item Description (Cont'd)

10.2.7.6	VERIFY CODE	Codes that establish correlation with previously indicated failures: not verified (NY), verified exactly (VE), or partially verified (PV); also verified with other failures noted (VO), partially verified with other failures noted (PO), and not verified, but other failures noted (NO).
10.2.7.7	TROUBLE DESCRIPTION NARRATIVE	A narrative discussion of failure or problem symptoms noted during test. Include, as appropriate, measured parameter values, specification or other "should be" values, environmental conditions, and pertinent observations.
10.2.8	Enter data to account for replacement or substitution during maintenance of the next lower level item, and note any changes as a result of maintenance performed at this level that affects configuration identification.	
10.2.8.1	REMOVED NEXT LOWER LEVEL ITEM NOMENCLATURE	The common name or plain English description of the next lower level item NOMENCLATURE removed during maintenance from the item in paragraph 10.2.6.
10.2.8.2	REMOVED NEXT LOWER LEVEL ITEM PART NO.	Part number of the item identified in paragraph 10.2.8.1.
10.2.8.3	REMOVED NEXT LOWER LEVEL ITEM SER. NO.	Serial number of the item identified in paragraph 10.2.8.1.
10.2.8.4	INSTALLED NEXT LOWER LEVEL ITEM NOMENCLATURE	Common name of the item used to replace the item identified in paragraph 10.2.8.1 that was removed for maintenance or the common name of the item installed without removal.
10.2.8.5	INSTALLED NEXT LOWER LEVEL ITEM PART NO.	Part number of the item identified in paragraph 10.2.8.4.
10.2.8.6	INSTALLED NEXT LOWER LEVEL ITEM SER. NO.	Serial number of the item identified in paragraph 10.2.8.4 (for serialized parts).
10.2.8.7	INSTALLED NEXT LOWER LEVEL ITEM LOT NO.	Lot number of the item identified in paragraph 10.2.8.4 (for nonserialized parts).
10.2.8.8	INSTALLED NEXT LOWER LEVEL ITEM MFR-FSCM	Name of the manufacturer or supplier of the item identified in paragraph 10.2.8.4. Also the FSCM or CAGE number for the named manufacturer or supplier.
10.2.8.9	CHG/REPAIRED NEXT LOWER LEVEL ITEM Y/N NOMENCLATURE	The common name of the item identified in paragraph 10.2.8.1 after maintenance. Indicate whether the nomenclature for the repaired item is different (Y/N) from the removed item.

Figure A-17. Excerpt from Data Item Description (Cont'd)

10.2.8.10	CHG/REPAIRED NEXT LOWER LEVEL ITEM Y/N PART NO.	Part number of the item identified in paragraph 10.2.8.9. Indicate whether this part number is different (Y/N) from paragraph 10.2.8.2.
10.2.8.11	CHG/REPAIRED NEXT LOWER LEVEL ITEM Y/N-SERIAL NO.	Serial number of the item identified in paragraph 10.2.8.9. Indicate whether this serial number is different (Y/N) from paragraph 10.2.8.3.
10.2.9	Enter data that describes the configuration of lower level items down to the lowest indenture level.	
10.2.9.1	LOWEST LEVEL REPAIR ITEM INDUCTION DATE	Date that repair begins on the lowest level item exhibiting verified failure or problem that requires component level repair.
10.2.9.2	LOWEST LEVEL REPAIR ITEM J.O. NO.	The locally assigned job order number used to account for costs associated with repair of the item.
10.2.9.3	LOWEST LEVEL REPAIR ITEM PART NO.	Part number of the lowest level item inducted for maintenance. This should be the same as paragraph 10.2.8.2 or 10.2.8.10.
10.2.9.4	LOWEST LEVEL REPAIR ITEM SER. NO.	Serial number of the lowest level item inducted for maintenance. This should be the same as paragraph 10.2.8.3 or 10.2.8.11.
10.2.9.5	LOWEST LEVEL REPAIR ITEM LOT NO.	Lot number of the lowest level item inducted for maintenance, if applicable.
10.2.9.6	LOWEST LEVEL REPAIR ITEM MFR-FSCM	Name of the manufacturer or supplier of the lower level item inducted for maintenance. Also the FSCM or CAGE number for the named manufacturer or supplier.
10.2.9.6.1	EXPLOSIVE LOAD DATE	The beginning date for determining age related time limits for items that contain explosive material (DD 1650 BLOCK 12).
10.2.9.6.2	PROPELLANT CURE DATE	The beginning date for determining age related time limits for items that contain deflagrating material, e.g. propellant grain (DD 1650 BLOCK 12).
10.2.9.6.3	AGE LIMITING MFG DATE	Manufacturing date for determining age related serviceable in-service time limits for items that do not contain volatile material.
10.2.9.7	REF DESIG	A unique drawing reference designator or circuit symbol that identifies the item inducted for maintenance and relates the specific item to a next higher assembly indenture level.

Figure A-17. Excerpt from Data Item Description (Cont'd)

10.2.9.8	DISPOSITION	The specific and final destination of the lowest level item: repaired and returned; dispositioned for special tests; scrapped; etc.
10.2.10	FAILURE ANALYSIS/ CORRECTIVE ACTION RECOMMENDED	Specific recommendations for additional investigation of the exhibited, or suspected failure modes and effects. Refer to related examples of special tests or depot failure reports, if known.
10.2.11	Enter data that documents the return of serviceable material to government custody, and the release of the repaired item to the customer's use.	
10.2.11.1	OUTGOING ETI METER	Cumulative operating time recorded from the elapsed time indicator at the time the restored item is accepted by the government.
10.2.11.2	WARRANTY ITEM/ WARRANTY PERIOD ADJUSTMENT	Modification of the term warranty period that accounts for accumulated service time, assembly of mixed warranty items at the next higher level, unserviceable time in depot maintenance, and other factors that may pertain.
10.2.11.3	GOVERNMENT ACCEPTANCE DATE	The date custody of the repaired item is accepted for the government by appropriate government authority.
10.2.11.4	SHIPPING DESTINATION LOC-UIC	Name of the activity intended as the final destination of the repaired item, and the unit identification code of that activity. This will usually be a coastal weapons station or air station; not a transshipment point.
10.2.11.5	TCN/GBL NO.	The transportation control number or the government bill of lading number that appears on the shipping documents.
10.2.11.6	SHIPPING DATE	The actual date the material is shipped from the depot.

Figure A-17. Excerpt from Data Item Description (Cont'd)

APPENDIX B

Management Information Coding Lists

APPENDIX B**Management Information Coding Lists****Table of Contents**

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Perpetual

Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Day
1	001	032	060	091	121	152	182	213	244	274	305	335	1
2	002	033	061	092	122	153	183	214	245	275	306	336	2
3	003	034	062	093	123	154	184	215	246	276	307	337	3
4	004	035	063	094	124	155	185	216	247	277	308	338	4
5	005	036	064	095	125	156	186	217	248	278	309	339	5
6	006	037	065	096	126	157	187	218	249	279	310	340	6
7	007	038	066	097	127	158	188	219	250	280	311	341	7
8	008	039	067	098	128	159	189	220	251	281	312	342	8
9	009	040	068	099	129	160	190	221	252	282	313	343	9
10	010	041	069	100	130	161	191	222	253	283	314	344	10
11	011	042	070	101	131	162	192	223	254	284	315	345	11
12	012	043	071	102	132	163	193	224	255	285	316	346	12
13	013	044	072	103	133	164	194	225	256	286	317	347	13
14	014	045	073	104	134	165	195	226	257	287	318	348	14
15	015	046	074	105	135	166	196	227	258	288	319	349	15
16	016	047	075	106	136	167	197	228	259	289	320	350	16
17	017	048	076	107	137	168	198	229	260	290	321	351	17
18	018	049	077	108	138	169	199	230	261	291	322	352	18
19	019	050	078	109	139	170	200	231	262	292	323	353	19
20	020	051	079	110	140	171	201	232	263	293	324	354	20
21	021	052	080	111	141	172	202	233	264	294	325	355	21
22	022	053	081	112	142	173	203	234	265	295	326	356	22
23	023	054	082	113	143	174	204	235	266	296	327	357	23
24	024	055	083	114	144	175	205	236	267	297	328	358	24
25	025	056	084	115	145	176	206	237	268	298	329	359	25
26	026	057	085	116	146	177	207	238	269	299	330	360	26
27	027	058	086	117	147	178	208	239	270	300	331	361	27
28	028	059	087	118	148	179	209	240	271	301	332	362	28
29	029		088	119	149	180	210	241	272	302	333	363	29
30	030		089	120	150	181	211	242	273	303	334	364	30
31	031		090		151		212	243		304		365	31

Figure B-1. Julian Date Calendar

Leap Year Only

Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Day
1	001	032	061	092	122	153	183	214	245	275	306	336	1
2	002	033	062	093	123	154	184	215	246	276	307	337	2
3	003	034	063	094	124	155	185	216	247	277	308	338	3
4	004	035	064	095	125	156	186	217	248	278	309	339	4
5	005	036	065	096	126	157	187	218	249	279	310	340	5
6	006	037	066	097	127	158	188	219	250	280	311	341	6
7	007	038	067	098	128	159	189	220	251	281	312	342	7
8	008	039	068	099	129	160	190	221	252	282	313	343	8
9	009	040	069	100	130	161	191	222	253	283	314	344	9
10	010	041	070	101	131	162	192	223	254	284	315	345	10
11	011	042	071	102	132	163	193	224	255	285	316	346	11
12	012	043	072	103	133	164	194	225	256	286	317	347	12
13	013	044	073	104	134	165	195	226	257	287	318	348	13
14	014	045	074	105	135	166	196	227	258	288	319	349	14
15	015	046	075	106	136	167	197	228	259	289	320	350	15
16	016	047	076	107	137	168	198	229	260	290	321	351	16
17	017	048	077	108	138	169	199	230	261	291	322	352	17
18	018	049	078	109	139	170	200	231	262	292	323	353	18
19	019	050	079	110	140	171	201	232	263	293	324	354	19
20	020	051	080	111	141	172	202	233	264	294	325	355	20
21	021	052	081	112	142	173	203	234	265	295	326	356	21
22	022	053	082	113	143	174	204	235	266	296	327	357	22
23	023	054	083	114	144	175	205	236	267	297	328	358	23
24	024	055	084	115	145	176	206	237	268	298	329	359	24
25	025	056	085	116	146	177	207	238	269	299	330	360	25
26	026	057	086	117	147	178	208	239	270	300	331	361	26
27	027	058	087	118	148	179	209	240	271	301	332	362	27
28	028	059	088	119	149	180	210	241	272	302	333	363	28
29	029	060	089	120	150	181	211	242	273	303	334	364	29
30	030		090	121	151	182	212	243	274	304	335	365	30
31	031		091		152		213	244		305		366	31

Figure B-1. Julian Date Calendar (Cont'd)

JCN SER ID (Block 1.C)	Weapon (AUR) Support Equipment Type	Lead Component (Note 1)
1.	TEST EQUIPMENT	----
2.	SIDEWINDER	Guidance and Control Section
3.	SPARROW	Target Seeker Group
4.	WALLEYE	Armament Section
5.	SHRIKE	Guidance Section
6.	PHOENIX	Guidance Section
7.	HARPOON/SLAM/SLAM ER	Warhead/Exercise Section
8.	HARM	Warhead Section
9.	(Reserved--Containers)	----
10.	MAVERICK	Guidance and Control Section
11.	HELLFIRE	(Note 2)
12.	SIDEARM	Guidance and Control Section
13.		
14.	MK 80 SERIES, L.D.G.P Bombs and Components	----
15.	AMRAAM	(Note 2)
16.	TOW	
17.	PENGUIN	Navigation and Control Section
18.	TOMAHAWK	
Notes:		
1. The all-up-round serial number is the same as the lead component serial number. The JCN serial number is associated with the weapon type shown. JCN SER ID number 02 and greater correspond to individual volumes of the Industrial Processing Guide, including those that are tentative and unknown.		
2. AMRAAM/HELLFIRE: No lead component, an AUR unique serial number is assigned to each AUR and is located on the propulsion section.		

Figure B-2. JCN Serial ID Code and Lead Component

<u>DESIGNATION</u>	<u>NOMENCLATURE</u>	<u>DESIGNATION</u>	<u>NOMENCLATURE</u>
<u>WALLEYE TEST EQUIPMENT</u>		<u>PHOENIX TEST EQUIPMENT</u>	
AN/DSM-96B	WALLEYE WEAPON TEST SET	AN/DSM-130(V)	GUIDED MISSILE TEST SET
OQ169/DSM-96B	WALLEYE WEAPON TEST SET		
QE-1154	SED TEST SET		
<u>SPARROW TEST EQUIPMENT</u>		<u>HARPOON TEST EQUIPMENT</u>	
AN/DPM-7	MISSILE TEST SET	AN/DSM-127	MISSILE SUBSYSTEM TEST SET
AN/DPM-21E	MISSILE TEST SET	C/CTS	CAPSULE/CANISTER TEST SET
AN/DPM-15	TELEMETRY TEST SET	BMCTS	BOOSTER MOTOR CIRCUITRY TEST SET
AN/DSM-156	FIELD TEST SET	PICTS	PRYO INTERFACE CIRCUITRY TEST SET
ASOTS	SED AUTOMATIC MISSILE TEST SET		
MK 378 MOD 0	ELECTRONIC FIRING SWITCH TEST SET	<u>SLAM/SLAM ER TEST EQUIPMENT</u>	
		AN/DSM-127C	MISSILE SUBSYSTEM TEST SET
		PICTS	PRYO INTERFACE CIRCUITRY TEST SET
<u>STANDARD ARM TEST EQUIPMENT</u>		<u>HARM TEST EQUIPMENT</u>	
TE-5853	GUIDED MISSILE TEST SET	AN/DSM-153	MISSILE TEST SET
AN/DSM-136	GUIDED MISSILE TEST SET	AN/AWM-82	CONTROL TEST SET
TS-3096	ANTENNA AND ELECTRONIC ASSEMBLY TEST SET (PER SA MAINTENANCE PLAN)		
TS-3010/MSM-98	MOBILE MISSILE MAINTENANCE		
QE-6000-SB	UNIT SET SED TEST SET	<u>MAVERICK TEST EQUIPMENT</u>	
<u>SHRIKE TEST EQUIPMENT</u>		NWSTS	MISSILE TEST SET
AN/DSM-68	MISSILE TEST SET	LTS	LASER TARGET TEST SET
AN/DSM-68A	MISSILE TEST SET	IRS	INFRARED SIMULATOR
MARK 481	TDD TEST SET		
TTU-341/E	CONTROL SECTION PRESSURE TESTER		
HRU-1047-E	CONTROL SECTION CONTINUITY TESTER		
<u>SIDEWINDER TEST EQUIPMENT</u>			
AN/DSM-78C	MISSILE TEST SET		
SMART	RATE TABLE (OR SED SMART)		
AN/DSM-98(V)	FIRING CIRCUIT CONTINUITY TESTER		
AN/DSM-66	TDD TEST SET		
TA-3037	UMBILICAL CABLE TESTER		
AN/DSM-132	TDD TEST SET		
AN/DSM-152	GUIDANCE CONTROL SYSTEM TEST SET		
NOS 24064	NOZZLE PRESSURE TESTER		
NPP 6925	PRESSURE INTEGRITY TESTER		
AN/DSM-140	TDD FIELDTEST SET		

Figure B-3. Missile Support Equipment Designation and Nomenclature

Missile Operation Codes**Visual Tests**

Incoming Visual Inspection	IV
Missile/Section/Component/Container	
Other Visual Inspection (e.g., AWB or NAR)	OV
Missile Sentencing Inspection/RSS&I	MS

Functional Tests

Continuity Test (Squib Check)	CT
Null Voltage Test	NV
Incoming Test of Missile/Section	IT
New production/fleet return/DOP return	
Leak Test	LT
Pressure Test	PT
Ultra Sonic Test	UT
X-Ray Test	XR
Retest (Explain in Narrative)	RT
Other Test (Explain in Narrative)	OT
Verification Test (QEA)	VT

Maintenance and Repair

Remove (Section or Component)	RM
Install (Section or Component)	IN
Disassemble (AUR)	DS
Assemble (AUR)	AS
TD Installed	TD
Repair Component (Explain in Narrative)	RP
Other Maintenance (Explain in Narrative)	OM

Other Reportable Operations

Condition Code Change	CC
Calibration (Test Equipment)	CA
Troubleshooting (Test Equipment)	TS
Adjustment	AD

Figure B-4. Missile Operation Codes

Missile Support Equipment Operational Codes

Operation	Code
Adjustment Made to Correct Test Equipment	AE
Air System Check	AC
Awaiting Other (Specify In Narrative)	AO
Awaiting Part	AP
Awaiting Service Representing	AS
Calibration or Alignment of Test Equipment at Calibration Laboratory	CL
Calibration or Alignment of Test Equipment in Place	CP
Cannibalization of a Unit by Removal of Parts	CN
Coolant Oil Sample	OS
Filtering	FL
Installation After Calibration	CI
Modification of Test Equipment in Accordance with a Requirement	ME
Periodic Test or Inspection in Accordance with a Requirement	PM
Removal and Installation of Drawer / Subassembly / Card / Component	RI
Removal of Drawer / Subassembly Card / Component	RM
Removal for Calibration	CR
Repair of a Component in Place	RP
Repair and Accomplishment of Corrective Action	RC
Reseat / Remate of Connector / Card / Component	RS
Retest after a Test Failure	RF
Self Test	ST
Test of Inspection of an Item Following Repair	TR
Trouble Shooting Test Equipment for Problems	TS

Figure B-5. Missile Support Equipment Operational Codes

Source Codes

Fleet Returned Units

<u>Code</u>	<u>Definition</u>
FF	Captive Flown Missile, Damaged. A missile/section which was captive flown during its deployment. Fleet inspection or test identified some defect which requires corrective maintenance.
FC	Captive Flown Missile, Undamaged. A missile/section which was captive flown during its deployment. Fleet inspection or testing identified no defect which would make the missile unsuitable for operational use. The Maintenance due date (mdd) may or may not be expired.
FX	Deep Stowed Missile, Damaged. A missile/section which was deep stowed during its deployment and is suspected to be damaged or contaminated.
FN	Deep Stowed Missile, Undamaged (Long Term MDD). A missile/section which was deep stowed during its deployment and has an unexpired MDD. Fleet records do not indicate missile was subject to damage or contamination.
FE	Deep Stowed Missile, Undamaged (Short Term MDD). A missile/section which was deep stowed during its deployment and is being returned because its MDD has (or soon will be) expired. Fleet records do not indicate physical damage or contamination.
FD	Ready Service Missile, Damaged. A missile/section which was placed in a ready service magazine but was not captive flown during its deployment. Fleet inspection or testing identified some defect which requires corrective action.
FS	Ready Service Missile, Undamaged. A missile/section which was placed in a ready service magazine but was not captive flown during its deployment. Fleet inspection or testing identified no defects which make the missile unsuitable for operational use. The MDD may or may not be expired.
FU	Deployment History Unknown. A missile/section whose deployment history is unknown.

Figure B-6. Source Codes

Source Codes

Non-Fleet Returned Units

<u>Code</u>	<u>Definition</u>
NP	New Production Unit. Used only on initial inspection, test, or retest of unit upon receipt from the manufacturer.
SP	New Supply Unit (Spare). Used when a unit is installed as a replacement in a missile/section whose source is other than new production.
ST	Unit Removed From Ready-for-issue Storage. Used for units that have been tested and placed in ready-for-issue storage and removed for use or test.
RP	Repaired Unit From Designated Overhaul Point. Used for all units returned from a designated overhaul point. Repaired units that are placed in storage upon receipt without test should show a repair point source code.
NW	Repaired Unit From New Production (Warranty). Used for manufacturer-repaired new units under a warranty program.
NR	Repaired Unit From New Production (Non-warranty). Used for manufacturer-repaired new units not under a warranty program.
RW	Repaired Unit From On Station Repair. Used to report units repaired locally.
MD	Unit Returned From Local Modification. Used only for initial inspection, test, or retest of a unit which was modified locally as a part of an established modification program.
TP	Unit Returned From Special Test Program. Used for inspection, test, or retest of a unit returned from a special test program.
QE	Unit Returned From A Quality Evaluation Activity. Used for a unit inspected or tested upon return from a quality evaluation activity, prior to shipment to a designated overhaul point or placement in storage.
WS	Unit Received From Another Weapons Station. Used only for a unit received from another weapons station in ready-for-issue condition.
IP	In Place Repaired Units. Used for all units repaired in place at test station (as a result of on-site failure).

Figure B-6. Source Codes (Cont'd)

Test/Inspection Results Codes

Construct a 3-character code to represent the result of any test or inspection as follows:

In the first position list the simple test/inspection result; in the second position identify specific problem area as listed; in the third position record conditions if any. Describe exceptions in narrative.

First Character: Note (1)

- P - Pass
- F - Fail (Hard Fail Only - Asset Is Physically Failed)
- N - Not A Complete Test

Second Character: (Where Is The Problem) Note (2)

- N - No Problem Noted (Most Passes)
- U - Unit Under Test Or Inspection Problem
- T - Test Equipment Problem
- P - Personnel/Procedural Problem
- D - Documentation Problem
- C - Calibration/Certification Problem

Third Character: (Status Of Asset) Note (3)

- U - Unconditional (Most Cases - Including MDD Expired Or Short)
- W - Waiver/Deviation
- T - Td Conditional

The first character of this three character results code indicates the actual result of the test or inspection performed. The ultimate question is whether the material is: (good Code P), (bad Code F) Or (unknown Code N).

Note (1) The first character of Code F indicates that the material requires repair or further isolation. The Code F is not applicable if the item requires periodic recertification (i.e. MDD), modification, or other scheduled maintenance actions. The Code P represents a successful result for that operation without regard to whatever subsequent actions will occur.

Note (2) The second character of this code indicates the specific problem encountered. The problem is most likely to be found in the item under test or inspection (Code U) or no problem at all (Code N). On occasion there will be a problem with the test or inspection equipment (Code T) personnel or procedural problems (Code P), or a documentation problem (Code D).

Example: A missile requiring maintenance, due to expiration of the MDD, or the incorporation of a technical directive is generally not to be classified as a problem. For This case the (Code N) is used to indicate (no problem noted) with the incoming visual or test operation. Don't consider the expired MDD or technical directive incorporation needed as a problem since the asset is not physically inoperable due to them. There are exceptions where a critical technical directive may be needed for a missile or component. In these cases, the asset should be considered (physically failed). A possible result code for this situation could be (Code FUT). For non-critical technical directive incorporations, the result code generally is (Code PNT). For MDD, The general result code is (Code PNU).

Note (3) The third character of this code identifies any conditions that are present which in some manner qualify the problem being addressed. Examples of this would be if an item passes only because of a waiver or deviation. Also if a particular technical directive, deficiency report, or notice of ammunition reclassification (Nar) Mandates that the item be treated as a failure or a problem.

Figure B-7. Test/Inspection Result Codes

Test/Inspection Codes For Missile Support Equipment

<u>Test Results</u>	<u>Code</u>
Accepted Without Test-(Explain In Narrative)	0
Go Test	1
No Go Test-(Item)-test Failure Due To Malfunction Of Equipment Under Test	2
No Go Test-(Personnel)-test Failure Due To Faulty Set Up, Procedure Error Or Misinterpretation By Operating Personnel	3
No Go Test -(Test Set)-test Failure Due Malfunction Of Test Set	4
Adjustment For Retest	5
Special Handling-(Explain In Narrative)	6
No Go Test-(Other)-source Of Failure Other Than As Listed (Explain In Narrative)	7
Go Test-(Other)-equipment Passed Test Because Of Waiver Or Deviation (Explain In Narrative)	8
Result Unknown-test Terminated	9
Inspection Codes Accepted Unconditionally	A
Accepted In A Waiver (Explain In Narrative)	B
Accepted On A Deviation (Explain In Narrative)	C
Accepted In A Waiver / Deviation (Explain In Narrative)	D
Accepted For Restricted Use (Explain In Narrative)	E
Rejected For Defect	F
Rejected For Incorrect Configuration	G
Rejected For Technical Instruction (Explain In Narrative)	H
Rejected-other (Explain In Narrative)	J
Rejected-not Certified	K
Rejected-out Of Calibration / Alignment	L
Rejected-calibration Required	M

Figure B-7. Test/Inspection Result Codes (Cont'd)

Missile Disposition Codes

<u>Action</u>	<u>Code</u>
Held Awaiting Next Action (Includes Non Rfi Storage)	HNA
Returned To Station Inventory (Quality Evaluation Activity Only)	RST
Sent to Designated Overhaul Point	DOP
Sent to Calibration (Test Equipment)	CAL
Sent to Quality Evaluation Activity	QEL
Sent to Long-term Storage Depot	LTS
Sent to Storage (Condition Code Dictates RFI or NON-RFI)	STO
Sent to Naval Weapons Station or Other Shore Activity	NWS
Sent to Stock Issue Point	STS
Transferred for Special Use	TEX

Figure B-8. Disposition Codes

Missile Support Equipment Disposition Codes

<u>Action</u>	<u>Code</u>
Accepted For Use	AAC
Sent to Calibration Laboratory	CAL
Sent to Dop (Designated Overhaul Point)	DOP
Held Awaiting Disposition Instructions	HAD
Held Awaiting Shipment	HAS
Held Awaiting Waiver to Make Item RFI	HAW
Held Awaiting Service Representative	HAR
Held for On-Base Repair	HBR
Held for Buildup	HBR
Held for Explosive Ordnance Disposal	HED
Held for Retest	HFR
Held for Modification	HFT
Sent to Long Term Storage Depot	HMO
Sent to Naval Weapons Station or Other Shore Activity	LTS
Sent to WQEC / SED	NWS
Returned to Station Inventory (WQEC Use Only)	RST
Sent to RFI Storage	STO
Surveyed to SA	STS
Surveyed and Withdrawn from Stock	SVY
Transfer of Item for Special Use (Implies Removal from Stock)	TEX

Figure B-8. Disposition Codes (Cont'd)

Missile Failure Category Codes

First Character (Method of detection) Note (1)

V - Visual Inspection Performed
T - Test Performed

Second Character (Component/Section affected) Note (2)

A - All-Up-Round
G - Guidance Section or Guidance Control Section (GCS)
P - Propulsion Section or Rocket Motor or Booster Rocket Motor
W - Warhead Section or Armament Section
T - Target Detecting Device
F - Airframe (including wings, fins, cables, canards, etc.)
X - Exercise Section or Telemetry Section
C - Control Section or Flight Control Group
S - Sustainer Section
K - Container
Y - Canister
Z - Capsule
I - Igniter or Safe & Arm Device (When separated from warhead)
O - Other (Pyrotechnics, etc.)

Third Character (Type of failure/problem) Note (3)

C - Excessive Corrosion
E - Electrical
H - Hydraulic/mechanical
D - Documentation (including logs, labels, tags)
K - Cosmetic or Minor Damage
P - Physical Damage (Major)
M - Maintenance Due Date
R - Alterations/Modifications Required (e.g., AWB, AWC, or other)

Describe exception problems in Narrative.

For Example: V. W. P.*

Comments:

Visual inspection(revealed that)
Ordnance Section
Physical Damage

(has following problem:)

Narrative: Warhead was dropped (which is exception from routine maintenance)

*This was formerly identified as WDR - Warhead (W) was dropped.

Figure B-9. Failure Category Codes

Missile Failure Category Codes

This failure category code (FCC) is used to indicate possible problems with the item. Failure category codes may be used on any data record. The result code need not be a failure. There is no requirement to report a failure category code for a particular item more than once.

Note (1) The first character of this three character failure category code indicates the method in which the discrepancy was found. The ultimate question is whether the problem was discovered through a visual observation of the material (Code V) or an electrical or mechanical test performed against the material (Code T).

The code of 'T' indicates that some test was performed which identified the problem. If the problem was discovered before the test and subsequently confirmed by the test, two separate failure category codes should be used.

Note (2) The second character of this code indicates where the specific problem is located. The letter corresponding to the item that has the failures is identified by the second character. If the problem occurs at a level (such as an igniter or battery) use the code letter corresponding to the next higher assembly for that item.

Note (3) The third character of this code identifies the nature of the problem found. Electrical problems (Code E) are most often identified after an electrical test utilizing specific test equipment. Cosmetic problems (Code K) include any problems that are external to the missile or section which generally can be repaired on site. Physical damage (Code P) are major external missile or section problems which generally must be repaired on site.

Figure B-9. Failure Category Codes (Cont'd)

Missile Support Equipment Failure Symptom Codes.

<u>Code</u>	<u>Description</u>
AFR	Abnormal Function of Computer Tape Reader
ADT	Abnormal Function of Data Terminal
ADC	Abnormal Function of Disc Unit / Power Supply
AKT	Abnormal Function of Keyboard Display Terminal
ALP	Abnormal Function of Line Printer
AMT	Abnormal Function of Magnetic Tape Equipment
AFP	Abnormal Function of Tape Punch
AFT	Abnormal Function of Tape Transport
AFC	Abnormal Function of Test System Computer
AOA	Accidental or Inadvertent Operation Release Or Activation
AAI	Adjustment or Alignment Improper
AIS	Air in System
AAz	Arcing, Arced
AVF	Audio And Video Faulty
AAT	Automatic Align Time Excessive
BBC	Bent, Buckled, Collapsed, Dated, Distorted Or Twisted
BSJ	Binding, Stuck, Or Jammed
BPD	B Plus Damage
BPB	B Plus Missing
BRO	Broken
BFM	Broken, Faulty, Or Faulty / Missing Wire
BFB	Broken or Frayed Bonding / Ground Wire
BFW	Brush Failure / Worn Excessively
BOB	Burned Out or Defective Light Bulb Or Led
BOO	Burned or Overheated
BOR	Burst or Ruptured
CRC	Cannot Resonate Input Cavity
COV	Change of Value
CTG	Chattering
CPD	Chipped
COI	Conductance Incorrect
CCD	Contracts / Connection Defective
CMN	Contamination
CLK	Coolant
CLL	Coolant Level
CLF	Coolant Flow
CRR	Corroded
CRD	Cracked
CTS	Cracked Vacuum Tube Socket
CCC	Cracked Card Connector
CIS	Current Incorrect
CUT	Cut
DIP	Damaged Input Probe
DLH	Data Line High Error Rate
DMP	Defective Motor or Pump
DRG	Defective Regulator
DVE	Defective Valve
DAC	Defective or Malfunctioning Anechoic Chamber
DMS	Defective or Malfunctioning Missile Support Stand
DLD	Delaminated

Figure B-9. Failure Category Codes (Cont'd)

Missile Support Equipment Failure Symptom Codes.

<u>Code</u>	<u>Description</u>
DTD	Deteriorated
DIR	Dirty
DAF	Dirty Air Filter
DOF	Dirty Oil Filter
DRK	Dirty Relay Contacts
DEC	Does Not Engage, Lock, or Unlock Correctly
DNT	Does Not Simulate Tracking Correctly
EHO	Excessive Hum
EPS	External Primary Power Source not Correct
EFS	External 400hz Power Source not Correct
FDI	Failed, Damaged Or Replaced Due to Malfunction of Associated Equipment or Item
FOU	Failed to Operate Function - Specific Reason Unknown
FDT	Failed Diagnostic, Automatic Test
PFU	Failure of Air Source
FOS	Failure of Oil Source
FCC	Faulty Circuit Card
FCR	Faulty Commercial Counter
FCD	Faulty Commercial Digital Voltmeter
FCG	Faulty Commercial Equipment
FPM	Faulty Commercial Power Supply
FCP	Faulty Component
FTC	Faulty Tape
FUE	Fluctuates, Unstable Or Erratic
FOD	Foreign Object Damage
FEI	Frequency Erratic Or Incorrect
FIS	Frequency Instability
FBP	Fuze Blown or Defective Circuit Protector
HYE	High
HVS	High Voltage Standing Wave Ratio
IIR	Impedance Incorrect
IOA	Impending or Incipient Failure Indicate by Oil Analysis
IFM	Improper or Faulty Maintenance
IPS	Improperly Positioned or Selected
ING	Incorrect Gain
INM	Incorrect Modulation
INV	Incorrect Voltage
IPD	Input Pulse Distortion
ISB	Insulation Breakdown
ITT	Intermittent
IFT	Internal Failure
LIL	Lack Of Proper Lubrication
LEK	Leak
LOE	Loose
LOO	Loose Or Damaged Bolts, Nuts, Rivets, Fasteners, Clamps, Or Other Common Hardware
LOW	Low
MSY	Malfunctioning Servo Assembly
MTY	Malfunctioning Transducer Assembly
MBN	Missing Bolts, Rivets, Fasteners, Clamps, Or Other Common Hardware

Figure B-9. Failure Category Codes (Cont'd)

Missile Support Equipment Failure Symptom Codes.

<u>Code</u>	<u>Description</u>
MPA	Missing Parts
NIC	Nicked
NOD	No Defect
NDC	No Defect - Component Removed and/or Reinstalled to Facilitate other Maintenance
NDI	No Defect - Component Removed for Calibration Interval
NDM	No Defect - Removed for Scheduled Maintenance
NDS	No Defect - Removed as Part of Matched System
NRC	No Defect - Removed for Time Change
NRM	No Defect - Removed for Modification
NWA	No Defect - Within Limits
NWC	No Defect - Within Calibration/Alignment
NDY	No Display
NFF	No Fuze Fire
NGU	No - Go Indication - Specific Reason Unknown
NOI	Noisy
NOP	No Output
OPN	Open
OSC	Oscillating
OTB	Out of Balance
OXF	Out of Band Frequency
OPD	Output Pulse Distortion
PIT	Pitted
POP	Poor or Incorrect Focus
POS	Poor Spectrum
PSI	Pressure Incorrect
RIC	Resistance Incorrect
SPF	Scope Presentation Incorrect or Faulty
SOS	Scored or Scratched
SHT	Shorted
SRF	Slip Ring or Commutator Failure
STD	Stripped
SMA	Sweep Malfunction
SAB	Sync Absent or Incorrect
TEM	Temperature Incorrect
TEN	Tension Incorrect
TOR	Torn
TOI	Torque Incorrect
TRD	Transportation Damage
TEI	Travel or Extension Incorrect
UAL	Unable to Adjust to Limits
WCF	Worn, Chaffed or Frayed
WFH	Worn or Faulty Harness
WLC	Wrong Logic -program

Figure B-9. Failure Category Codes (Cont'd)

<u>Status Codes (Test Equipment)</u>	
<u>Status</u>	<u>Code</u>
OPERATIONAL	OPR
REDUCED CAPABILITY REQUIRES CALIBRATION	CAL
REDUCED CAPABILITY REQUIRES CERTIFICATION	CRT
REDUCED CAPABILITY REQUIRES CALIBRATION OF A COMPONENT	COC
REDUCED CAPABILITY REQUIRES MAINTENANCE	MNT
INOPERATIVE	DWN

Figure B-10. Status Codes (Test Equipment)

Ammunition Condition Codes And Defect Codes

Ammunition Condition Codes and Defect Codes are required to segment and identify the physical condition of ammunition material. Questions concerning application of these codes shall be referred to the cognizant inventory manager. Ammunition Condition Codes and Defect Codes are required so that the physical condition of ammunition can be identified and reported. The codes are used for the following:

1. Ammunition Users: to identify serviceability, limitations and restrictions for assurance of safety and quality.
2. Ammunition Receipt, Segregation, Storage and Issue (RSSI), Inspection, Renovation, Repair, Overhaul, Maintenance and Manufacturing activities: to identify material condition for planning, control and disposition.
3. Inventory Managers: to track material condition in support of ammunition distribution and control and to provide worldwide stock status, asset and expenditure data.
4. Technical Managers: to determine and direct necessary ammunition acquisition, production, maintenance, renovation, surveillance, stockpile reclassification, and disposal actions to assure Fleet readiness, and to provide impact assessment (Mission Readiness) during reclassification determination.

In order to satisfy the needs of all who use Ammunition Condition Codes and Defect Codes they must be standardized and they must be assigned correctly. Any error in the assignment of the codes will have an adverse effect on safety, performance or availability.

The following pages define and amplify the Ammunition Condition Codes and Defect Codes as they apply to Navy non-nuclear ammunition and sonobouys. For each code the title and definition from NAVSUP P-724 (NOTAL) publications are provided for reference. These are followed by amplifications, notes and significant examples for Navy ammunition.

Figure B-11. Ammunition Condition Codes and Defect Codes

CODE: A

NAVSUP P-724

TITLE: SERVICEABLE Ready-For-Issue (Without Qualification)

DEFINITION: Any material which meets acceptance criteria applied through inspection and testing and is ready for issue to all customers without limitation or restriction.

NAVY AMMUNITION AMPLIFICATION

TITLE: SERVICEABLE Ready-for-Issue (Without Qualification)

AMPLIFY-CATION Any material which meets acceptance criteria applied through inspection and testing and is Ready-for-Issue to all customers without limitation or restriction.

1. Includes material with a nonconformance, authorized by waiver or deviation, which will be fully usable and serviceable to all customers without limitation or restriction.
2. Includes material which can be issued upon completion of pelletization, or unit loading.
3. Includes ammunition with assigned shelf-life if more than 6 months shelf-life remain, except as follows:

Carts/CADs/PADs (2E): Applicable only to primary, secondary and forward-deployed stock points. "Minimum shelf-life" or more must remain. [Refer to NAVAIR 11-100-1 (series) or NAVAIR 11-85-1, as applicable, to identify "minimum shelf-life."]

Underwater Mine/Countermeasures Components (including batteries) (6T): No minimum remaining shelf-life required. Must not be expired.

Note: For ammunition with an assigned service life, the amount of life remaining (time to expiration of service life, Serviceable-In-Service-Time, Maintenance Due Date, overhaul cycle, certification cycle or calibration interval) will not be considered in assigning Code A; items may remain Code A until the life expires.

Note: Includes material (Returns) which meets serviceability criteria applied at receipt or receiving inspection points.

Figure B-11. Ammunition Condition Codes and Defect Codes (Cont'd)

CODE: **B**

NAVSUP P-724

TITLE: SERVICEABLE, Ready-For-Issue (With Qualification)

DEFINITION: Any material which meets acceptance criteria applied through inspection and testing and is Ready-for-Issue but which is issuable under limited or restricted conditions to any customer or which is issuable only to specific units, activities or geographical areas due to a limited usefulness of the material.

NAVY AMMUNITION AMPLIFICATION

TITLE: SERVICEABLE, Ready-for-Issue (With Qualification)

AMPLIFICATION Any material which meets acceptance criteria applied through inspection and testing and is Ready-for-Issue but which is issuable under limited or restricted conditions to any customer or which is issuable only to specific units, activities or geographical areas due to a limited usefulness of the material.

1. Includes material that is limited to its end use due to a restriction, environment or usage limitation by specific users.
2. Includes material with a nonconformance, authorized by waiver or deviation, which will be usable and serviceable under specific limited or restricted conditions.
3. Includes material or non-standard configuration or identification which is intended for non-standard, test or training use only.
4. Includes material which can be issued upon completion of palletization, repalletization or unit loading.
5. Includes ammunition with assigned shelf-life if between 3 and 6 months shelf-life remain, except as follows:

Carts/CADs/PADs (2E): Applicable only to primary, secondary and forward-deployed stock points. Less than "minimum shelf-life" must remain, but must not be expired. [Refer to NAVAIR 11-100-1 (series) or NAVAIR 11-85-1, as applicable, to identify "minimum shelf-life."] **Note: Items may remain in Code B until their shelf-life expires. Items in Code B due to limited remaining shelf-life shall not be issued without NAVAMMOLOGCEN Inventory Manager approval.**

Underwater mine/Countermeasures Components (including batteries) (6T): Code B is not assigned to limited shelf-life. Must not be expired.

Note: For ammunition with an assigned service life, the amount of life remaining (time to expiration of service life, Serviceable-In-Service-Time, Maintenance Due Date, overhaul cycle, certification cycle or calibration interval) will not be considered in assigning Code B.

Note: For all shelf-life items except Carts/CADs/AEPS, Code B items shall be issued before Code A items in order to preserve inventory life.

Note: Includes material (Returns) which meets serviceability criteria applied at receipt or receiving inspection points.

Figure B-11. Ammunition Condition Codes and Defect Codes (Cont'd)

CODE: C

NAVSUP P-724

TITLE: SERVICEABLE, Ready-For-Issue (Priority)

DEFINITION: Any material which meets acceptance criteria applied through inspection and testing and is serviceable and Ready-for-Issue to all customers but which must be issued before other serviceable stocks.

NAVY AMMUNITION AMPLIFICATION

TITLE: SERVICEABLE Ready-for-Issue (Priority)

AMPLIFICATION: Any material which meets acceptance criteria applied through inspection and testing and is serviceable and Ready-for-Issue to all customers but which must be issued before other serviceable stocks.

1. Includes material directed by cognizant inventory or technical managers to be issued, used or consumed in order to retain or conserve other stocks in condition codes A or B.
2. Includes material (for immediate training) with only cosmetic defects if the material meets required safety criteria.
3. Includes material which can be issued upon completion of palletization, repalletization or unit loading.
4. Includes ammunition with assigned shelf-life if less than 3 months shelf-life remain, except as follows:

Carts/CADs/PADs (2E): Applicable only to primary, secondary and forward-deployed stock points. Code C is not assigned due to limited shelf life. Must not be expired. **Note: Items with less than "minimum shelf-life" may remain in Code B until their shelf-life expires.**

Underwater Mine/Countermeasures Components (including batteries) (6T): Code C is not assigned due to limited shelf-life. Must not be expired.

Note: For ammunition with an assigned service life the amount of life remaining (time to expiration of service life, Serviceable-In-Service-Time, Maintenance Due Date, overhaul cycle, certification cycle or calibration interval) will not be considered in assigning Code C.

Note: For all shelf-life items except Carts/CADs/PADs, Code C items shall be issued before Code A or Code B items in order to preserve inventory life.

Note: Includes material (Returns) which meets serviceability criteria applied at receipt or receiving inspection points.

Figure B-11. Ammunition Condition Codes and Defect Codes (Cont'd)

CODE: **D**

NAVSUP P-724

TITLE: SERVICEABLE, Not-Ready-For-Issue (Pending Acceptance)

DEFINITION: Material which requires Navy acceptance test and inspection.

NAVY AMMUNITION AMPLIFICATION

TITLE: SERVICEABLE, Not-Ready-For-Issue (Pending Acceptance)

AMPLIFI-
CATION Material which requires Navy acceptance test and inspection.

1. Material received from commercial procurement or new production and which is awaiting final acceptance by the Navy, including material awaiting acceptance under Depot Acceptance Programs (DAP) and Government Lot Acceptance Test (GLAT).
2. Unserviceable material requiring test, alteration, modification, conversion, or disassembly will be assigned Condition Codes E or F.

Note: Code D material may be issued only as authorized and directed by the cognizant Inventory or Technical Manager. Code D material shall not be issued for Fleet use.

Figure B-11. Ammunition Condition Codes and Defect Codes (Cont'd)

CODE: E

NAVSUP P-724

TITLE: UNSERVICEABLE, Not-Ready-For-Issue (Restoration)

DEFINITION: Material which can be restored to serviceable condition through the accomplishment of Organizational or Intermediate Level Maintenance (O/ILM).

NAVY AMMUNITION AMPLIFICATION

TITLE: UNSERVICEABLE, Not-Ready-For-Issue (Restoration)

AMPLIFICATION Material which can be restored to serviceable condition through the accomplishment of Organizational or Intermediate Level Maintenance (O/ILM).

1. Includes material whose shelf life or service life (including Maintenance Due Date, overhaul cycle, certification cycle or calibration interval) has expired, and does not require surveillance or technical evaluation directed by cognizant Inventory or Technical Managers as a condition to classification.
2. Includes material which can be made fully serviceable as a result of exterior maintenance with limited expense or effort. Does not include replacement of components, modification or alteration.
3. For Air Launched Missiles and MK46 Torpedoes: Material that can be made serviceable at the holding activity within their authorized repair and component interchange capability.
4. Includes unserviceable material requiring limited repair (estimated repair cost less than 50% of unit price): material requiring major repair or complete overhaul or repair is unknown will normally be assigned condition code F stock. Code E includes type II expired shelf life material which can be restored to serviceable condition and which is accomplished in the storage activity where the stock is located.

Note: **Does not** include material with missing parts or components. (See Code G.)

Note: Code E material **shall not** be issued for Fleet use.

- Examples:
1. Gun projectiles requiring Minor Exterior Maintenance, including markings, as defined in NAVSEAINST 8014.1A. (current revision)
 2. Weapon with expired MDD. O/ILM procedures provide for MDD renewal. Surveillance or higher level technical evaluation is not required.
 3. Weapon which requires test, alteration, modification, marking, conversion or disassembly, and O/ILM procedures provide routine direction.

Figure B-11. Ammunition Condition Codes and Defect Codes (Cont'd)

CODE: **F**

NAVSUP P-724

TITLE: UNSERVICEABLE, Not-Ready-For-Issue (Repairable)

DEFINITION: Material which can be restored to serviceable condition through the accomplishment of Depot Level Maintenance (DLM).

NAVY AMMUNITION AMPLIFICATION

TITLE: UNSERVICEABLE (Repairable)

AMPLIFICATION Material which can be restored to serviceable condition through the accomplishment of Depot Level Maintenance (DLM).

1. Includes material which is radioactively contaminated.
2. Includes material whose shelf life or service life (including Maintenance Due Date, overhaul cycle, certification cycle or calibration interval) has expired and inspection criteria or other formal disposition instructions direct restoration through DLM.
3. Includes material which is unserviceable due to defects not related to missing parts or components.
4. Unserviceable material which does not qualify for Condition Codes E, G or H. Includes material requiring major repair or overhaul and unserviceable material for which the extent of repair is unknown.
5. Includes items which require operations more complex than care and preservation and involves replacement of components.
6. For Air Launched Missiles and MK46 Torpedoes: Material that cannot be made serviceable at the holding activity and requires DLM.
7. For MK48 Torpedo: material located at an Intermediate Maintenance Activity (IMA) for Torpedo Warshot verification turnaround

Note: Code F material **shall not** be issued for Fleet use.

- Examples:
1. Weapon with missing part or component and requiring DLM.
 2. Gun projectiles requiring Major Maintenance, Modification, Overhaul, Reconditioning or Rework, as defined in NAVSEAINST 8014.1A.
 3. Weapon component with expired service life. DLM procedures provide service life renewal. Surveillance or higher level technical evaluation is not required.
 4. Weapon which requires test, alteration, modification, marking, conversion or disassembly, and DLM procedures provide routine direction.

Figure B-11. Ammunition Condition Codes and Defect Codes (Cont'd)

CODE: **G**

NAVSUP P-724

TITLE: UNSERVICEABLE, Not-Ready-For-Issue (Incomplete)

DEFINITION: Material requiring additional parts or components to complete the end item prior to restoration or issue.

NAVY AMMUNITION AMPLIFICATION

TITLE: UNSERVICEABLE, Not-Ready-For-Issue (Incomplete)

AMPLIFI- Material requiring additional parts or components to complete the end item prior to
CATION restoration or issue.

1. Applicable to incomplete end items for which the required parts/components have been identified.
2. Includes material which requires test or restoration (see definition and amplification for condition code E or F) as well as the installation or assembly of missing parts or components.
3. Items which require major repair, modification or alteration, as well as the replacement of components, will not be reported under Condition Code F.
4. Applicable to incomplete items for which the required parts have been or are being requisitioned. Items which are stored with parts missing and the parts are not being ordered will be assigned Condition Codes E or F.

Note: Material which requires repair (see definition and amplification for condition code F) as well as the installation or assembly of missing parts or components will be assigned to Code F.

Note: Code G material **shall not** be issued for Fleet use.

Figure B-11. Ammunition Condition Codes and Defect Codes (Cont'd)

CODE: **H**

NAVSUP P-724

TITLE: UNSERVICEABLE, Not-Ready-For-Issue (Condemned)

DEFINITION: Material which has been determined to be unserviceable and does not meet repair criteria.

NAVY AMMUNITION AMPLIFICATION

TITLE: UNSERVICEABLE, Not-Ready-For-Issue (Condemned)

AMPLIFI-
CATION Material which has been determined to be unserviceable and does not meet repair criteria.

1. Includes condemned material which is radioactively contaminated.
2. Includes material determined to be unsuitable or unsafe for service use, or material that is beyond economical repair.
3. Includes material whose shelf life or service life (including Maintenance Due Date, overhaul cycle or certification cycle) has expired and cannot be restored to serviceable condition.

Note: Code H may be assigned only by the cognizant Inventory or Technical Manager unless test, inspection, maintenance or repair instructions provide specific condemnation provisions for local activity determination.

Note: Code H material shall not be issued for Fleet use.

Note: Does not include material assigned to Emergency Combat Use condition (see Code N).

Note: **Classify obsolete and excess material to its proper condition before consigning to the DRMO. Do not classify material in Supply Condition Code H unless it is truly unserviceable and does not meet repair criteria.**

- Examples:
1. A Type I shelf life item which expired (non-extendable) shelf life.
 2. A Type II shelf life item with expired shelf life, previously extended or renewed to the maximum extension or renewal authorized.

CODE: **I**

NAVSUP P-724

TITLE: (Not to be Assigned)

Figure B-11. Ammunition Condition Codes and Defect Codes (Cont'd)

CODE: **J**

NAVSUP P-724

TITLE: SUSPENDED, Not-Ready-For-Issue (In Stock)

DEFINITION: Material in stock which has been suspended from issue pending condition classification or analysis, where the true condition is not known.

NAVY AMMUNITION AMPLIFICATION

TITLE: SUSPENDED (In Stock)

AMPLIFICATION Material in stock which is suspended pending condition classification or analysis, where the true condition is not known.

1. Includes material on stock records in different condition and the previous condition has become suspect.
2. Includes material under investigation due to malfunction.
3. Includes material identified as a Quality Deficiency Report (QDR) exhibit when the material is new or newly reworked and received from a government activity.
4. Includes material whose shelf life or service life (including Maintenance Due Date, overhaul cycle, certification cycle or calibration interval) has expired and which requires surveillance or technical evaluation directed by cognizant Inventory or Technical Managers or repair cost analysis as a condition to classification.
5. Applicable only to material already on stock records in a different condition and the previous condition has become suspect. Condition Code J will be assigned only temporarily while the true condition of the material is verified.

Note: Code J may be assigned **only temporarily** while the true condition of the material is being determined.

Note: Code J material may be issued **only** as authorized and directed by the cognizant Inventory or Technical Manager. Code J material **shall not** be issued for Fleet use.

Note: **Does not** include material assigned to Emergency Combat Use condition (see Code N).

- Examples:
1. Any material, received from any source other than customers or users, for which receipt or receiving inspection (with condition code assignment) has not been performed.
 2. A Type II shelf life item with expired shelf life, pending results of inspection, test or restorative action.

Figure B-11. Ammunition Condition Codes and Defect Codes (Cont'd)

CODE: **K**

NAVSUP P-724

TITLE: SUSPENDED, Not-Ready-For-Issue (Returns)

DEFINITION: Material returned from customers or users which is suspended pending condition classification or analysis, where the true condition is not known.

NAVY AMMUNITION AMPLIFICATION

TITLE: SUSPENDED, Not-Ready-For-Issue (Returns)

AMPLIFI- Material returned from customers or users which is suspended pending condition
CATION classification or analysis, where the true condition is not known.

1. Limited to material which requires physical segregation or Sentencing Inspection (SI) which cannot be accomplished during routine receipt or receiving inspection.
2. Returned underwater mine material will not be taken up in condition Code K unless directed by the inventory manager. Returned mine material will be taken up and reported under the condition code cited on Turn-in documents.

Note: Code K material may be issued **only** as authorized and directed by the cognizant Inventory or Technical Manager. Code K material **shall not** be issued for Fleet use.

Note: Code K may be assigned **only temporarily** while the true condition of the material is being determined.

- Examples:
1. Airborne weapons, true condition unknown, which require Missile Sentencing Inspection (MSI).
 2. Any material, returned from customers or users, for which receipt or receiving inspection (with condition code assignment) has **not** been performed.

Figure B-11. Ammunition Condition Codes and Defect Codes (Cont'd)

CODE: L

NAVSUP P-724

TITLE: SUSPENDED, Not-Ready-For-Issue (Litigation)

DEFINITION: Material held pending litigation or negotiation with contractors or common carriers.

NAVY AMMUNITION AMPLIFICATION

TITLE: SUSPENDED, Not-Ready-For-Issue (Litigation)

AMPLIFI-
CATION Material held pending litigation or negotiation with contractors or common carriers.

1. Includes material identified as a Quality Deficiency Report (QDR) exhibit when the material is new or newly reworked from a contractor.

Note: Code L material may be issued only as authorized and directed by the cognizant Inventory or Technical Manager or as directed by QDR disposition authority. Code L material **shall not** be issued for Fleet use.

CODE: M

NAVSUP P-724

TITLE: SUSPENDED, Not-Ready-For-Issue (In Work)

DEFINITION: Material identified on inventory control records but which has been turned over to a maintenance facility or contractor for processing.

NAVY AMMUNITION AMPLIFICATION

TITLE: SUSPENDED, Not-Ready-For-Issue (In Work)

AMPLIFI-
CATION Includes all components and/or end items transferred from storage to an "onbase" production facility for assembly, disassembly, modification, test, check or demilitarization.

Figure B-11. Ammunition Condition Codes and Defect Codes (Cont'd)

CODE: N

NAVSUP P-724

TITLE: SUSPENDED, Not-Ready-For-Issue (EMERGENCY COMBAT USE)

DEFINITION: Material which is suspended from issue except for Emergency Combat Use.

NAVY AMMUNITION AMPLIFICATION

TITLE: SUSPENDED (EMERGENCY COMBAT USE)

AMPLIFI-
CATION Material which is suspended from issue except for emergency combat use.

1. Code N material are items that are suspect or may not function as designed. These items either have no fix available or it is not economical to repair them. Included are items that are obsolete and available replacements/substitutes are not on hand in sufficient quantities.
2. Includes all material which has gone overage or the MDD (Maintenance Due Date) has expired.

Note: Code N may be assigned or issued only as specifically directed by the cognizant Inventory or Technical Manager.

CODE: P

NAVSUP P-724

TITLE: UNSERVICEABLE (Reclamation)

DEFINITION: Material determined to be unserviceable as an assembly and is uneconomically repairable, but which contains serviceable components or assemblies to be reclaimed.

NAVY AMMUNITION AMPLIFICATION

TITLE: UNSERVICEABLE (Reclamation)

AMPLIFI-
CATION Material determined to be unserviceable as an assembly and is uneconomically repairable, but which contains serviceable components or assemblies to be reclaimed.

1. Applicable to material that is to be held for reclamation.

Note: Code P may be assigned only by the cognizant Inventory or Technical Manager unless test, inspection, maintenance or repair instruction provide specific reclamation provisions for local activity determination.

Note: Code P material **shall not** be issued for Fleet use.

Figure B-11. Ammunition Condition Codes and Defect Codes (Cont'd)

CODE: **Q**

NAVSUP P-724

TITLE: SUSPENDED (Quality Deficient Exhibits)

DEFINITION: Quality deficient exhibits returned by customers/users as directed by the MIM due to technical deficiencies reported by Quality Deficiency Report. Exhibit requires engineering analysis to determine cause of failure to perform in accordance with specifications. This code is for intra-Air Force use only

NAVY AMMUNITION AMPLIFICATION

TITLE: SUSPENDED (Quality Deficient Exhibits for intra-Air Force use only)

CODE: **R**

NAVSUP P-724

TITLE: Suspended (Reclaimed Items Awaiting Condition Determination).

DEFINITION: Assets turned in by reclamation activities which do not have the capability (e.g., skills, manpower or test equipment) to determine the material condition. Actual condition will be determined prior to induction into maintenance activities for repair/modification.

NAVY AMMUNITION AMPLIFICATION

TITLE: Suspended (Reclaimed Items Awaiting Condition Code Determination).

TITLE: Suspended (Reclaimed Items Awaiting Condition Code Determination).

Figure B-11. Ammunition Condition Codes and Defect Codes (Cont'd)

CODE: **S**

NAVSUP P-724

TITLE: Unserviceable (Scrap).

DEFINITION: Material that has no value for its basic material content. No stock will be recorded as on hand in Condition Code S. This code is used only on transactions involving shipments to DMROs. Material will not be transferred to Condition Code S prior to turn into DMROs if material is recorded in Condition Codes A through H at the time material is determined excess. Material identified by NSN will not be identified by this Condition Code. (Navy activities will not use this code; its use was made optional at the discretion of each service/agency).

NAVY AMMUNITION AMPLIFICATION

TITLE: Unserviceable (Scrap).

CODE: **O, T-Z**

NAVSUP P-724

TITLE: Not Assigned.

DEFINITION: Reserved for future assignment by DoD

Figure B-11. Ammunition Condition Codes and Defect Codes (Cont'd)

NUMBER OF CHARACTERS: ONE
 TYPE OF CODE: Alphabetic
 EXPLANATION: Status Codes (first character) are single, alpha-character codes which complement C/Cs by identifying the action required to determine the true condition or to change the current condition when the C/C alone does not provide this identification. Status Codes are listed and defined as follows:

<u>Code</u>	<u>Definition</u>
A	Warranty in effect. Used with C/C "L" or other assigned C/C (except "A," "B," "C," "H," "J," "K," or "P") when specific defects (identified by Defect/Special Remark Code) are covered by warranty.
B	For/pending Quality Evaluation/surveillance. Used with any C/C (except "D," Pending Acceptance, "K" or "L") to identify QE/Surveillance samples/items.
C	(Not assigned)
D	For/pending acceptance. Used with C/C "D" only, assets not previously accepted.
E	For/pending certification/recertification/post renovation test. Used with C/C "D" only, for assets previously accepted.
F	For/pending Engineering Investigation, Airborne Weapons Corrective Action Program (AWCAP) investigation or other malfunction analysis. Used with C/C "J" only.
G	Pending authorization for demilitarization or reclamation. Used with C/C "J" only, for non-repairable assets when test, inspection, maintenance or repair instruction do not provide specific condemnation or reclamation provisions for local activity determination.
H	For/pending demilitarization/reclamation. Used with C/C "H" or "P" (as applicable) only.
I	(Not used)
J	Pending screening for known/suspected defects, or segregation or other visual inspection to determine true condition. Used with C/C "E," "J," or "K" (as applicable) only.
K	Pending receipt inspection. Used with C/C "j" or "K" (as applicable) only.
L	Quality Deficiency Report (QDR) Exhibit/Report of Discrepancy (ROD). Used with C/C "D," "J" or "L" (as applicable) only.
M	Pending disposition. Used with C/C "J" (pending C/C determination), or with C/C "H" or "P" (as applicable) when disposition for disposal or reclamation is required.
N	Requires palletization, repalletization, unit loading or correction of related discrepancies prior to shipment/issue. Used with any C/C (except "K").

Figure B-12. Status Codes

NUMBER OF CHARACTERS: ONE
 TYPE OF CODE: Alphabetic
 EXPLANATION: Status Codes (first character) are single, alpha-character codes which complement C/Cs by identifying the action required to determine the true condition or to change the current condition when the C/C alone does not provide this identification. Status Codes are listed and defined as follows:

<u>Code</u>	<u>Definition</u>
O	(Not used)
P	Pending sorting due to known mixed condition, lots, models, or types. Used when any unacceptable mixture requires separation, regardless of C/C(s) assigned.
Q	(Not assigned)
R	Requires correction of unacceptable packaging to provide environmental protection prior to long term storage or shipment. Used with any C/C (except "A," "B," "C," "K" or "N").
S	(Not assigned)
T	NOT FOR USN/USMC USE.
U	(Not assigned)
V	NOT FOR USN/USMC USE.
W	NOT FOR USN/USMC USE.
X	Obsolete. Used with any C/C (except "C" Priority Issue, "D" Pending Acceptance, "K" or "L").
Y	(Not assigned)
Z	No Status Code applies.

Figure 12 Status Codes (Cont)

NUMBER OF CHARACTERS: ONE
 TYPE OF CODE: Alphabetic
 EXPLANATION: Purpose Codes provide the means for segmenting and identifying on inventory control records, the purpose or reason for which an inventory balance is held.

<u>Code</u>	<u>Title</u>	<u>Definition</u>
A	General Issue	Stocks held which are available for general issue and which are not earmarked or reserved for other specific purposes.
B	General Mobilization Reserve	Stocks held for general mobilization reserve material objective. Includes production components required for D to P day production
C	Specific Mobilization Reserve	Stocks held to meet specific mobilization reserve material objectives.
D	PWRS Mobilization Reserve	Stock held to meet prepositioned war reserve material objectives.
E	Reserved for Specific Plans or Projects	Stocks held to support requirements generated by a specific plan, project, or operation other than general, specific, or PWRS mobilization material objectives. To be used to identify expendable ordnance material earmarked for the War Reserve Stock for Allies (WRSA) program
F	Reserved for Production, Maintenance and Reclamation	Stocks held to support military service/DLA accomplished repair, alteration, modification, conversion, assembly, or reclamation program. To be used to identify Previously repaired components in production for assembly U.S. Navy activities.
G	Reserved for Provisioning	Stocks held to support provisioning of end items.
H	Reserved for GFM	Stocks held for issue as government furnished material to support contractually-accomplished repair or production.
J	Reserved for SAP	Stocks allocated and earmarked for Security Assistance Program.
K	Reserved for Loan	Stocks held for issue on a loan basis.
L	Suspended	Stocks issued on a loan basis. (On Loan)
M	Potential DoD Excess	Stocks that have been determined to be in excess of authorized retention levels and are held pending completion of DOD utilization screening.

Figure B-13. Purpose Codes

<u>Code</u>	<u>Title</u>	<u>Definition</u>
N	Reserved for MAS	Stocks allocated and earmarked for Military Assistance Sales.
P	Reserved for Cooperative Logistics Support Arrangements	Stocks allocated and earmarked for issue against U.S. commitments under Cooperative Logistics Support Arrangements.
Q	SPECWAR Allocated Stocks	Stocks allocated and earmarked for Naval Special Warfare Forces (Naval Special Warfare Groups/Units, Seal/adv Teams, Special Test Units/Squadrons and NSWC Coronado).
S	Planned Requirements	Stocks protected by the inventory manager for subsequent draw-down by customer.
T	Modernization and Backfitting Stock	Material required for backfitting and modernization controlled by the cognizant NAVAIR Fleet Readiness Representative.
*T	Modernization, Restoration, and Backfitting Stock	Material required for restoration backfitting or modernization. (Controlled by NAVAIRWARCEN Point Mugu detachments.)
U	Navy Ordnance Ready Reserve Inventory	Maintains material in a ready for issue condition in a benign storage environment.
V	PAR Program Stocks	(1) Depot Level Pool Stock (2) NAVSEASYS COM new construction (3) New production expandable ordnance components for assembly.
W	Special Pools and Programs	Organizational and Intermediate level pool stock; fixed allowance stock.
Y	Radioactive-Contaminated	Stocks reserved for decontamination processing.
Z	Locally Established Planned Requirements	Planned requirements recorded locally to support specific repair or alteration program.
NOTE *L This purpose code may be reflected as a control level under Purpose Code A (General Issue). Only those items selected for stockage in accordance with military service/DLA guidance and which are to be protected will be reflected under this code (or level).		
*T For Air Launched Missile Replaceable Component Pool Only.		

Figure B-13. Purpose Codes (Cont'd)

NUMBER OF CHARACTERS: ONE
TYPE OF CODE: Alphabetic
EXPLANATION: Activity Classification Codes are for use of ATR reporting Activities

<u>Code</u>	<u>Definition</u>
A	Naval Air Training Commands. Air Stations/Activities/Units/Squadrons.
B	Commander, Naval Reserve Force. Air Stations/Activities/Units/Squadrons.
C	Marine Corps. Aircraft Squadrons, Training and Reserve.
D	Naval Reserve Centers/Facilities
E	Naval Reserve Ships. (Except DDs).
F	Naval Reserve Officers Training Corps Units and High Schools. (Located at Colleges and Universities)
G	Naval Air Stations/Marine Corps Air Stations.
H	Naval Facilities, Service Schools, Hospitals, Security Groups, Communication and Radio Stations, Recruit-Training Centers, Intelligence Offices.
J	Test/Research/Development Activities.
K	Other activities, Commands, Offices, i. e. , Naval Shipyards, Naval Supply Centers, Naval Supply Depots, etc.
L	Fleet Commanders (LANT/PAC).
M	Contractor Activities Reporting New Production Assets.
Q	All Activities Reporting Ammunition Reserved for Naval Special Warfare Forces (Naval Special Warfare Groups/Units, SEAL/DSV Teams Special Boat Units/Squadrons and NSWC Coronado.
T	Depot Level Maintenance Facility (Navy Owned Material) Contractor Activities Reporting In-Service-Assets.
U	Activities Reporting Navy Ordnance Ready Reserve Inventory
V	Depot Level Maintenance Facility (MAP Owned Material)
W	All Shore Activities Reporting USMC Class V(W) Ammunition Transactions (OT Cog only).

Figure B-14. Activity Classification Codes for Minor CONUS Reporting Units

<u>NAME</u>	<u>CODE</u>	<u>NAME</u>	<u>CODE</u>
Afghanistan	AF	Ecuador	EC
Algeria	AG	Egypt	EG
Andorra	AN	Ireland	EI
Antigua and Barbuda	AC	Equatorial Guinea	EK
Argentina	AR	Estonian	EN
Australia	AT	El Salvador	ES
Austria	AU	Ethiopia	ET
Bahamas	BF	Falkland Islands	FA
Bahrain	BA	Fiji	FJ
Bangladesh	BG	Finland	FI
Barbados	BB	France	FR
Belgium	BE		
Belize	BH		
Benin (Formerly Dahomey)	DA	Gambia	GA
Bhutan	BT	Gabon	GB
Bolivia	BL	Ghana	GH
Botswana	BC	Grenada	GJ
Brazil	BR	Germany	GM
Brunei	BX	Greece	GR
Burkina Faso (Formerly Upper Volta)	UV	Guatemala	GT
Burma	BM	Guyana	GU
Burundi	BY	Guinea	GV
		Guinea-Bissau	PU
		Germany (Bonn)	GY
Cambodia	CB		
Cameroon	CM		
Canada	CN	Haiti	HA
Central African Republic	CT	Honduras	HO
Chad	CD	Hungary	HU
Chile	CI		
China (People's Republic of)	CH		
Columbia	CO	Indo china	IC
Congo (Brazzaville)	CF	Indonesia	ID
Costa Rica	CS	Iceland	IL
Cuba	CU	India	IN
Cyprus	CY	Iraq	IQ
Czechoslovakia	CZ	Iran	IR
		Israel	IS
		Italy	IT
Dahomey (See Benin) Guinea		Ivory Coast	IV
Denmark	DE		
Djibuti	DJ		
Dominica	DO	Japan	JA
Dominican Republic	DR	Jamaican	JM
Bolivia (International Narcotics Control)	D1	Jordan	JO
Peru (International Narcotics Control)	D3		
MAP ICP-USALDJ	D4		
Columbia (International Narcotics Control)	D5	Kenya	KE

Figure B-15. Country/Ownership Codes

<u>NAME</u>	<u>CODE</u>	<u>NAME</u>	<u>CODE</u>
Ecuador (FMS cases financed w/FY 90 credit) D6		Korea (Seoul)	KS
Latin American Anti-Narcotics Assistance D9		Kuwait	KU
NATO-WPP	K1	NATO	N2
NAMSA-F104	K2	NATO SEASPARROW	N3
NATO MRCA	K3	NAMSA-General	N4
NICSMA	K4	NATO Infrastructure	N5
SACLANT	K5	NATO Headquarters	N6
NAMSA-NNTC	K6	NAMSA	N7
NATO AEW&C (O&S)	K7	NATO MWDP	N8
		NAMFI	N9
Laos	LA		
Lebanon	LE	Paraguay	PA
Latvia	LG	Peru	PE
Lithuania	LH	Philippines	PI
Liberia	LI	Pakistan	PK
Liechtenstein	LS	Poland	PL
Lesotho	LT	Panama	PN
Luxembourg	LX	Papua-New Guinea	PP
Libya	LY	Portugal	PT
Madagascar (Formerly Malagasy Republic) MA		Qatar	QA
Malagasy Republic (See Madagascar)			
Malaysia	MF	Russia	RS
Malawia	MI	Rwanda	RW
Monaco	MN	Europe Region	R2
Morocco	MO	NESA	R3
Mauritius	MP	EAP	R4
Mauritania	MR	American Republic Region	R5
Malta	MT	African Region	R6
Oman	MU		
Maidive Island	MV		
Mexico	MX	Saint Christopher Nevis	SC
Mozambique	MZ	Seychelles	SE
Myanmar (Formerly Burma)	BM	Saudi Arabian National Guard	SI
MAPSAD	M2	Senegal	SK
MAPON	M3	Sierra Leone	SL
NAMSA Weapons	M5	San Marino	SM
NPLO	M6	Singapore	SN
NATO (Southern Region Signal/ Communications NAMSA-COMMO)	M7	Somalia	SO
Mali	RM	Spain	SP
		Saudi Arabia	SR
		Saint Lucia	ST
		Sudan	SU
Netherlands	NE	Sweden	SW
Nigeria	NI	Syria	SY
Niger	NK	Switzerland	SZ
Norway	NO		
Nepal	NP		

Figure B-15. Country/Ownership Codes (Cont'd)

<u>NAME</u>	<u>CODE</u>	<u>NAME</u>	<u>CODE</u>
Sunname	NS	United Arab Emirates	TC
Nicaragua	NU	Trinidad-Tobago	TD
New Zealand	NZ	Thailand	TH
NAPMO	N1	Turkey	TK
Tonga	TN	Saint Vincent and Grenadines	VC
Togo	TO	Venezuela	VE
Sao Tome and Principe	TP		
Tunisia	TU		
Tanzania	TZ	Western Samoa	WS
CENTO HQ	T3	Swaizland	WZ
SEATO HQ	T4		
ICAO HQ	T7		
United Nations	T9	Yemen (Sanaa)	YE
		Yemen	YM
		Yemen (Aden)	TS
South Africa	UA	Yugoslavia	YU
Uganda	UG	Zambia	ZA
United Kingdom	UK		
Ukraine	UP		
Uruguay	UY	DoD GC-MAP	00
		Expanded IMET	66
United States Army	01	United States Marine Corps	04
United States Navy	05	United States Air Force	06

Figure B-15. Country/Ownership Codes (Cont'd)

APPENDIX C

Acronyms

APPENDIX C

Acronyms

AAA - Army Ammunition Activity	AMHAZ - Ammunition and Hazardous Materials Review Board
AAC - Anti-Aircraft Common	AMMO - Ammunition Management Office
AAE - Aircraft Armament Equipment	AMMRL - Aircraft Maintenance Material Readiness List
AA&E - Arms, Ammunition & Explosives	AMRAAM - Advanced Medium Range Air-to-Air Missile
AAF - Activity Address File	AMPRS - Ammunition Maintenance Progress Reporting System
AAP - Army Ammunition Plant	AMRAD - Armament/Munitions Requirements and Development
ABCL - As-Built Configuration List	AO - Oiler/Aviation Ordnanceman
ABFC - Advanced Base Functional Component	AOC - Army Operations Center/Aviation Ordnance Chief
ABIOL - Advanced Base Initial Outfitting List	AOCS - Senior Chief Aviation Ordnancemen
ABSLA - Approved Basic Stock Levels of Ammunition	AOCM - Master Chief Aviation Ordnancemen
ACB - Amphibious Construction Battalion	AOE - Fast Combat Support Ship
ACC - Aircraft Controlling Custodian/Activity Classification Code	AOR - Replenishment Oiler
ACD - Allocated Configuration Documentation	AORR - Aviation Ordnance Readiness Review
ACI - Allocated Configuration Identification	APA - Appropriation Purchase Account
ACMDS - Automated Configuration Management Data System	APE - Ammunition Peculiar Equipment
ACR - Ammunition Condition Report	APL - Allowance Parts List
ACO - Administrative Contracting Officer	APML - Assistant Program Manager, Logistics
AD - Destroyer Tender	APN - Aviation Procurement, Navy
ADC - Ammunition Data Card	AQL - Acceptable Quality Level
AD&C - Ammunition Distribution and Control	AR - Asset Readiness
ADIMS - Ammunition Disposal Inventory Management System	ARO - Asset Readiness Objective
ADL - Automated Data List	ARR - Allowance Requirements Register
ADRA - Ammunition Disposition Request and Authorization	AS - Submarine Tender
ADP - Automated Data Processing	ASCM - Antiship Cruiser Missile
AE - Ammunition Ship	ASD - Assistant Secretary of Defense
AEA - Acquisition Engineering Agent	ASE - Armament Support Equipment
AECA - Arms Export Control Act	ASN - Assistant Secretary of the Navy
AEDA - Ammunition, Explosives and other Dangerous Articles	ASR - Assembly Service Record
AESR - Aeronautical Equipment Service Record	ATAC - Advanced Traceability and Control
AFAO - Approved Acquisition Objective	ATP - Allied Technical Publication
AFFF - Aqueous Film Forming Foam	ATR - Ammunition Transaction Reporting
AFP - Approved for Full Production	AUR - All-Up-Round
AGM - Air To Ground Missile	AUTOSERD - Automated Support Equipment Recommendation Data
AIE - Acceptance Inspection Equipment	AV-3M - (Naval) Aviation Maintenance and Material Management
AIG - Address Indicator Group	AVCAL - Aviation Consolidated Allowance List
AIM - Air Intercept Missile	AVDLR - Aviation Depot Level Repairables
AIMD - Aircraft Intermediate Maintenance Department	AWB - Airborne Weapon Bulletin
AL - Acquisition Logistician	AWC - Airborne Weapon Change
ALM - Air Launched Missile	AWCAP - Airborne Weapons Corrective Action Program
ALMS - Air Launched Missile System	AWARS - Airborne Weapon Analysis and Reporting System
ALN - Ammunition Lot Number	AWIS - Airborne Weapon Information System
ALP - Approved for Limited Protection	AWM - Awaiting Maintenance
AMAR - Ammunition Management Accountability Review	AWP - Awaiting Parts
AMC - U. S. Army Material Command	
AMCCOM - U.S. Army Munitions and Chemical Command	

AWSE - Armament Weapons Support Equipment	CINCPACFLT - Commander in Chief, Pacific Fleet
AWWS - Airborne Weapons Workload Schedule	CINCUSNAVEUR - Commander in Chief, U.S. Naval Forces Europe
B08 - Cyclic Repairables Management Program	CISR - Configuration Identification
BAM - Baseline Assessment Memorandum	CLF - Combat Logistic Force
BAM-007 - Baseline Accounting Module	CM - Configuration Management
BCM - Beyond Capability of Maintenance	CMC - Commandant of Marine Corps
BDU - Bomb Dummy Unit	CMM-002 - Contract Monitoring Module
BGM - Basic Ground Missile	CMP - Configuration Management Plan
BJM - Budget Justification Materials	CNAD - Conference of National Armaments Directors
BMU - Beachmaster Unit	CNC - Change Notice Card
BRM - Budget Renovation Model	CNET - Chief of Naval Education and Training
CAA - Clean Air Act	CNO - Chief of Naval Operations
CAB - Centralized Accounting and Billing	COBAL - Common Oriented Business Language
CAD - Cartridge Actuated Device	CODR - Conventional Ordnance Deficiency Report
CAD - Computer Aided Design	COG - Cognizance
CADMSS - Configuration and Data Management Support System	COMFLTACT - Commander, Fleet Activity
CAE - Computed Aided Engineering	COMINEWARCOM - Commander, Mine Warfare Command
CAGE - Commercial and Government Entity	COMNAVAIRESFOR - Commander, Naval Air Reserve Force
CAIMS - Conventional Ammunition Integrated Management System	COMNAVRESFOR - Commander, Naval Reserve Force
CALA - Combat Aircraft Loading Areas	COMNAVSURFLANT - Commander, Naval Surface Force, U.S. Atlantic Fleet
CAM - Computed Aided Manufacture	COMNAVSURFPAC - Commander, Naval Surface Force, U.S. Pacific Fleet
CAM-004 - Change Accounting Module	COMNAVSURFRESFOR - Commander, Naval Surface Reserve Force
CANTRAC - Catalog of Navy Training Courses	COMSC - Commander, Military Sealift Command
CAO - Contract Administration Office	COND Code - Condition Code
CAP - Conventional Ammunition Plan	CONREP - Connected Replenishment
CAP/CAN - Capsule/Canister	CONUS - Continental United States
CAS - Corrective Action Subsystem	CRS - Contingency Retention Stock
CASREP - Casualty Summary Report	COPE - Conventional Ordnance Performance Evaluation
CAT - Category/Catalog	COSAL - Coordinated Shipboard Allowance List
CAWCF - Conventional Ammunition Working Capital Fund	COSBAL - Coordinated Shore Based Allowance List
CBU - Cluster Bomb Unit	CRA - Continuing Resolution Authority
CC - Classification of Characteristics, Condition Code	CRD - Complete Round Dictionary
CCB - Configuration Control Board	CRS - Contingence Retention Stock
CCSS - Commodity Command Standard System	CR IPL - Consolidated Remain-In-Place List
CDCA - Central Data Collection Agency	CSA - Configuration Status Accounting
CDI - Collateral Duty Inspector	CSEL - Combat System Equipment List
C, DoD - Comptroller, Department of Defense	CTPL - Central Technical Publication Library
CDQAR - Collateral Duty Quality Assurance Representative	CURTS - Consolidated Unsatisfactory Report Tracking System
CDRL - Contractor Data Requirements List	CV - Aircraft Carrier
CE - Combat Expenditure	CVN - Aircraft Carrier, Nuclear
CES - Contractor Evaluation System	CVT - Controlled Variable Time
CFM - Contractor Furnished Material	CWA - Clean Water Act
CFO Act - Chief Financial Officers Act of 1990	DA - Design Agent
CFR - Code of Federal Regulations	DAAS - Defense Automated Addressing System
CG - Commanding General	DAP - Depot Acceptance Program
CHB - Cargo Handling Battalion	DAS - Defense Armament Subsystem
CHIL - Consolidated Hazardous Item List	DBOF - Defense Business Operations Fund
CI - Configuration Item	D/C - Defect Code
CIN - Course Identification Number	
CINCLANT - Commander in Chief, Atlantic	
CINCLANTFLT - Commander in Chief, Atlantic Fleet	
CINCPAC - Commander in Chief, Pacific	

DCF - Document Control Form	EDCA - Executive Director for Conventional Ammunition
DCNO - Deputy Chief of Naval Operations	EDMICS - Engineering Data Management Information and Control System
DCP - Decision Coordinating Paper	EED - Electro explosive Device
DCS - Deputy Chief of Staff	EHR - Equipment History Record
DDESB - DoD Explosive Safety Board	EI - Engineering Investigation
DID - Data Item Description	EIC - Equipment Identification Code
DIDS - Defense Integrated Data System	EIDS - Extremely Insensitive Detonating Substances
DISP - Disposition	EIM-006 - ECP Impact Module
DLA - Defense Logistics Agency	EMCON - Emission Control
DLR - Depot Level Repairable	EMR - Explosive Mishap Report
DMI - Depot Maintenance Interservicing	EOC - End of Construction
DEMIL - Demilitarization	EOD - Explosive Ordnance Disposal
DFAR - Defense FAR Supplement	EODDET - Explosive Ordnance Disposal Detachment
DFAS - Defense Finance and Accounting Service	EODMU - Explosive Ordnance Disposal Mobile Unit
DG - Defense Guidance	EODGRU - Explosive Ordnance Disposal Group
DIC - Document Identifier Code	EOQ - Economical Order Quantity
DID - Data Item Description	EPA - Environmental Protection Agency
DIDS - Defense Integrated Data System	ERDL - Extended Range Data Link
DLA - Defense Logistics Agency	ERS - Economic Retention Stock
DLM - Depot Level Maintenance	ESD - Electrostatic Discharge
DLSC - Defense Logistics Support Center	ESI - Explosive Safety Inspection
DMISA - Depot Maintenance Interservice Support Agreement	ESS - Electronic Security Systems
DMWR - Depot Maintenance Work Requirements	ESSO - Explosives Safety Support Office
DNO - Did Not Occur	ESTMS - Explosives Safety Technical Manual System
DoD - Department of Defense	ETA - Estimated Time of Arrival
DoDAAC - Department of Defense Activity Address Code	ETI - Elapsed Time Indicator
DoDAC - Department of Defense Ammunition Code	ETS - European Telecommunication Standards
DoDCS - DOD Constant Surveillance Service	EX-CONUS - Outside Continental United States
DoDIC - Department of Defense Identification Code	FAAT - First Article Acceptance Testing
DoN - Department of the Navy	FAD - Force Activity Designator
DOP - Designated Overhaul Point	FAR - Federal Acquisition Regulation
DoT - Department of Transportation	FBM - Fleet Ballistic Missile
DPAS - Defense Priorities and Allocation System	FCA - Functional Configuration Audit
DRB - Defense Resources Board	FCD - Functional Configuration Documentation
DRLOG - Deficiency Reporting Log	FCI - Functional Configuration Identification
DRMMR - Defense Reutilization and Marketing Precious Metal Recovery Office	FCS - Federal Catalog System
DRMO - Defense Reutilization Office	FCTCL - Fleet Combat Training Center Atlantic
DRMR - Defense Reutilization Region	FEDLOG - Federal Logistics Catalog
DRMS - Defense Reutilization Service	FFAR - Folding Fin Aircraft Rocket
DRO - Disposal Release Order	FFCA - Federal Facility Compliance Act
DSA - Defense Supply Agency	FFT - For Further Transfer
DSAA - Defense Security Assistance Agency	FIFO - First in/First Out
DSACS - Defense Standard Ammunition Computer System	FILL - Fleet Issue Load List
DSF - Data Services Facility	FIR - Financial Inventory Report
DSMC - Defense Systems Management College	FIRL - Fleet Issue Requirements List
DSP - Designated Support Point	FLEACT - Fleet Activity
DTG - Date Time Group	FLIR - Forward Looking Infrared
DTID - Disposal Turn in Document	FLIPL - Financial Liability Investigation of Property Loss Report
DTTS - Defense Transportation Tracking System	FLIS - Federal Logistics Information System
DUP - Depot Utilization Plan	FLEMATSUPPO - Fleet Material Support Office
ECC - Error Classification Code	FLR - Field Level Repairable
ECP - Engineering Change Proposal	FLTCINC - Fleet Commander in Chief
ECTS - Engineering Change Tracking System	FMF - Fleet Marine Force

FMFIA - Federal Managers Financial Integrity Act of 1982
 FMS - Foreign Military Sales
 FMSO - Fleet Material Support Office
 FOD - Foreign Object Damage
 FOSAM - Fleet Optical Scanning Ammunition Marking System
 FPM - Federal Personnel Manual
 FSC - Federal Supply Classification Code
 FSG - Federal Supply Group
 FSCM - Federal Supply Code for Manufacturers
 FSP - Fixed Standard Prices
 FST - Fleet Support Team
 FTC - Fleet Training Center
 FTS - Federal Telephone Service
 FYDP - Future Years Defense Program
 GAO - General Accounting Office
 GBL - Government Bill of Lading
 GBU - Guided Bomb Unit
 GFE - Government Furnished Equipment
 GFM - Government Furnished Material
 GM - Gunner's Mate
 GOCO - Government Owned Contractor Operated
 GOGO - Government Owned Government Operated
 GPA - Government Performance and Results Act of 1993
 GSA - General Services Administration
 HAC - House Appropriations Committee
 HASC - House Armed Services Committee
 HCD - Hazard Class Division Code
 HCSDS - Hazardous Component Safety Data Statements
 HARM - High-speed Anti-radiation Missile
 HERO - Hazards of Electromagnetic Radiation to Ordnance
 HMO - Hazardous Material, Other
 HMR - Hazardous Material Report
 HMX-1 - Marine Helicopter Squadron One
 HP - Hewlett-Packard
 HSC - Hardware Systems Command
 HW Hazardous Waste
 IB - Issue Book
 ICAMP - Integrated Conventional Ammunition Maintenance Plan
 ICAPP - Integrated Conventional Ammunition Procurement Plan
 ICE - Inventory Control Effectiveness
 ICLAMP - Intensified Closed Loop Aeronautical Management Program
 ICP - Inventory Control Point
 ICRL - Individual Component Repair List
 IDMS - Integrated Disposal Management System
 IDS - Intrusion Detection System
 IEC - International Electro-technical Commission
 IFI - Immediate Fleet Issue
 ILM - Intermediate Level Maintenance
 ILS - Integrated Logistic Support
 ILSP - Integrated Logistic Support Plan
 ILSM - Integrated Logistics Support Manager

ILSMIS - Integrated Logistics Support Management Information System
 ILSMT - Integrated Logistics Support Management Team
 ILSP - Integrated Logistic Support Plan
 IM - Inventory Manager
 IMA - Intermediate Maintenance Activity
 IMRL - Individual Material Readiness List
 IO - Inventory Objective
 IOC - U. S. Army Industrial Operations Command
 IPB - Illustrated Parts Breakdown
 IPD - Issue Priority Designator
 IPOD - Interim Proof of Delivery
 IPG - Industrial Processing Guide
 IPM - Inventory Projection Model
 IPP - Industrial Preparedness Planning
 IR - Infrared
 IRRS - Improved Rearming Rate System
 ISEA - In Service Engineering Agent
 ISMIS - Industrial Support Management Information System
 ISO - International Organization for Standardization
 ITU - International Telecommunication Union
 J&A - Justification and Approval
 JATO - Jet Assisted Takeoff
 JCAP - Joint Conventional Ammunition Program
 JCAPP - Joint Conventional Ammunition Program and Procedures
 JCN - Job Control Number
 JCS - Joint Chiefs of Staff
 JDA - Joint Deployment Activity
 JDAM - Joint Direct Attack Munition
 JHCS - Joint Hazard Classification System
 JLC - Joint Logistics Commanders
 JLRSA - Joint Long Range Strategic Appraisal
 JETDS - Joint Electronic Type Designation System
 JMSNS - Justification for Major Systems New Start
 JOCG - Joint Ordnance Commanders Group
 JPAM - Joint Program Assessment Memorandum
 JSPD - Joint Strategic Planning Document
 JSOW - Joint Stand Off Weapon
 LAP - Load, Assemble and Pack
 LAT - Lot Acceptance Test
 LAMPS - Light Airborne Multipurpose System
 LCR - Logistics Complete Round
 LDGP - Low Drag General Purpose
 LEM - Logistics Element Manager
 LGB - Laser Guided Bomb
 LGTR - Laser Guided Training Round
 LFORM - Landing Force Operational Reserve Material
 LHA - Amphibious Assault Ship
 LIRSH - List of Items Requiring Special Handling
 LM - Logistics Managers
 LOA - Letter of Acceptance
 LOE - Level of Effort

LOGMARS - Logistics Application of Automated Marking and Reading System
 LOI - Letter of Instruction
 LOR - Letter of Request
 LORA - Level of Repair Analysis
 LPD - Amphibious Transport Dock
 LPH - Amphibious Assault Ship (General Purpose)
 LRA - Last Rework Activity
 LRIP - Low Rate Initial Production
 LSA - Logistics Support Analysis
 LSAR - Logistics Support Analysis Record
 LSE - Logistics Support Equipment
 LSMP - Logistics Support and Mobilization Plan
 LSN - Local Stock Number
 2M - Miniature/Microminiature
 3M - Maintenance and Material Management
 MAARS - Marine Ammunition Accounting and Reporting System
 MAC - Military Airlift Command
 MAERU - Mobile Ammunition Evaluation and Reconditioning Unit
 MAF - Master Ammunition File
 MAG - Marine Aircraft Group
 MARS - Management Action Reporting System
 MAS - Management Action System
 MAT - Missile Assist Team
 MARCORSYSCOM - Marine Corps Systems Command
 MARSO - Marine Corps Ammunition Requirements Support Orders
 MAS - Military Agency for Standardization
 MAU - Marine Amphibious Unit
 MC - Military Committee
 MCB - Mobile Construction Battalion
 MCAS - Marine Corps Air Station
 MCC - Material Condition Code
 MCO - Marine Corps Order
 MCP - Maintenance Certification Period
 MCRL - Master Cross Reference List
 MCS - Missile Control System / Mine Countermeasures ship
 MDD - Maintenance Due Date
 MDR - Maintenance Data Report
 MDS - Maintenance Data System
 MEASURE - Metrology Automated System for Uniform Recall and Reporting
 MECFA - Maintenance Engineering Cognizant Field Activity
 MER - Multiple Ejection Rack
 MESS - Maintenance Engineering Support System
 MHz - Megahertz
 MIC - Master Index of Consumables
 MIR - Master Index of Repairables
 MILSTAMP - Military Standard Transportation and Movement Procedures
 MILSTRAP - Military Standard Requisition and Accounting Procedures

MILSTRIP - Military Standard Requisition and Issue Procedure
 MIP - Malfunction Investigation Plan
 MIPR - Military Interdepartmental Purchase Request
 MIM - Maintenance Instruction Manual
 MISMO - Maintenance Interservice Support Management Offices
 MLI - Munitions List Item
 MLSF - Mobile Logistics Support Force
 MLSR - Missing, Lost, Stolen, or Recovered Report
 MLA - Missile Launcher Assembly
 MLM - Marine Location Marker
 MMCO - Maintenance/Material Control Officer
 MOE RULE - Management Organization Entity Rule
 MOMAG - Mobile Mine Assembly Group
 MOS - Military Occupational Speciality
 MOSS - Mobile Submarine Simulator
 MOU - Memorandum of Understanding
 MP&IS - Munitions Procurement and Inventories Study
 MPASS - Maintenance Plan and Supply Support System
 MPRSA - Marine Protection, Research, and Sanctuaries Act
 MPS - Material Planning Studies
 MR - Mission Readiness
 MRC - Maintenance Requirement Card
 MRD - Material Release Denial
 MRIL - Master Repairable Item List
 MRO - Material Release Order, MILSTRIP Release Order, Mission Readiness Objective
 MSI - Missile Sentencing Inspection
 MSR - Module Service Record
 MSS - Management Support Subsystem, Motor Surveillance Service
 MTF - Mechanical Time Fuze
 MTMC - Military Traffic Management Command
 MTR - Mandatory Turn-in Repairables
 N/A - Not Applicable
 NAAQS - National Ambient Air Quality Standards
 NADEP - Naval Aviation Depot
 NADIS - Naval Aviation Depot Information System
 NAIA - Non-nuclear Ammunition Inventory Accuracy Program
 NAIWP - Naval Ammunition Interchange Working Party
 NALC - Navy Ammunition Logistics Code / Naval Aviation Logistics Center / Naval Ammunition Logistics Center / National Association of Letter Carriers
 NALDA - Naval Aviation Logistics Data Analysis
 NALCOMIS - Naval Aviation Logistics Command Management Information System
 NAMDRP - Naval Aviation Maintenance Discrepancy Reporting Program
 NAMP - Naval Aviation Maintenance Program
 NAR - Notice of Ammunition Reclassification
 NAS - Naval Air Station
 NATO - North Atlantic Treaty Organization

NATOPS - Naval Air Training and Operating Procedures Standardization	NNORS - Non-Nuclear Ordnance Requirements Study
NAVAIR - Naval Air Systems Command	NOC - Not Otherwise Coded
NAVAIRLANT - Naval Air Force, Atlantic	NOMIS - Naval Ordnance Management Information System
NAVAIRPAC - Naval Air Force, Pacific	NOMMP - Naval Ordnance Maintenance Management Program
NAVAIRSYSCOM - Naval Air Systems Command	NOR - Notice of Revision
NAVAIRWARCENWPNDIV - Naval Air Warfare Center Weapons Division	NPDES - National Pollutant Discharge Elimination System
NAVAVNDEPOT - Naval Aviation Depot	NRFI - Not Ready for Issue
NAVAVNLOGCEN - Naval Aviation Logistics Center (NALC)	NSA - Navy Stock Account
NAVCOMTELSTA - Naval Computer and Tele-Communications Station	NSADS - Navy Security Assistance Data System
NAVEDTRA - Naval Education and Training	NSC - Naval Supply Center
NAVILCO - Naval International Logistics Command	NSD - Naval Supply Depot
NAVFLIRS - Naval Flight Record Subsystem	NSF - Navy Stock Fund
NAVMAG - Naval Magazine	NSGA - Naval Security Group Activity
NAVORD - Naval Ordnance	NSN - National Stock Number
NAVAMMOLOGCEN - Naval Ammunition Logistics Center	NSO - Numeric Stockage Objective
NAVORDSTA - Naval Ordnance Station	NSWC - Naval Surface Warfare Center
NAVPRO - Naval Plant Representative Office	NSWCDIV - Naval Surface Warfare Center Division
NAVSAFECEN - Naval Safety Center	NTFS - Navy Training Feedback System
NAVSCOLEOD - Navy School, Explosive Ordnance Disposal	NTSB - National Transportation Safety Board
NAVSEA - Naval Sea Systems Command	NTS - Night Targeting System
NAVSEALOGCEN - Naval Sea Logistics Center	NTP - Navy Training Plan
NAVSEASYSYSCOM - Naval Sea Systems Command	NVLNO - Navy Liaison Office
NAVSHIP - Naval Ship	NWCAP - Nuclear Weapons Corrective Action Program
NAVSTA - Naval Station	NWASTA - Naval Warfare Assessment Station, Corona, CA
NAVSUP - Naval Supply Systems Command	NWP - Naval Warfare Publication
NAVSUPSYSCOM - Naval Supply Systems Command	OBE - Operating Budget Estimate, Overcome By Events
NAWMU-1 - Naval Airborne Weapons Maintenance Unit One	OCONUS - Outside Continental U. S.
NAWS - Naval Air Weapons Station	OESO - Ordnance Environmental Support Office
NBVC - Naval Base Ventura County	OJT - On-the-job Training
NCEA - Noncombat Expenditure Allocation	OLA - Navy Office of Legislative Affairs
NCER - Noncombat Expenditure Requirement	OLM - Operational Level Maintenance
NCR - National Capital Region	O&MN - Operations and Maintenance, Navy (Appropriation)
NCRDP - Navy Component Repair Defense Program	OMA - Organizational Maintenance Activity
NCTS - Navy Civilian Technical Specialists	OMB - Office of Management and Budget
NDI - Nondestructive Inspection	OMD - Operations Maintenance Division
NEC - Navy Enlisted Classification	OMS - Ordnance Management System
NEW - Net Explosives Weight	ONR - Office of Naval Research
NFESC - Naval Facilities Engineering Services Center	OPCOM - Operational Commander
NHA - Next Higher Assembly	OPEVAL - Operational Evaluation
NICN - Navy Item Control Number	OPLAN - Operational Plan
NIF - Navy Industrial Fund	OPN - Other Procurement, Navy (Appropriation)
NIIN - National Item Identification Number	OPRN - Operation
NIPO - Navy International Programs Office	OPNAV - Office of the Chief of Naval Operations
NMCM - Not Mission Capable Maintenance	OPSCAN - Optical Scanning System
NMCS - Not Mission Capable Supply	OPTAR - Operating Target
NMCT - Not Mission Capable Target Auxiliary/Augmentation System	OR - Operational Requirement
NNOR - Non-Nuclear Ordnance Requirements	ORDALT - Ordnance Alteration
	OS - Operational Stock
	OSD - Office Secretary of Defense
	OSI - Operational Support Inventory
	OWRMR - Other War Reserve Material Requirement
	P&A - Price and Availability

PAN-MC - Procurement, Ammunition Navy, Marine Corps (appropriation)
 PAS - Pre-award Survey
 PBD - Program Budget Decision
 PBL - Product Base Line
 PC - Personal Computer
 PCA - Physical Configuration Audit
 PCD - Program Change Decision
 PCO - Procurement Contracting Office
 PCR - Program Change Request
 PD - Project Directive
 PDLI - Project Directive Line Item
 PDM - Program Decision Memoranda
 PDREP - Product Deficiency Reporting and Evaluation Program
 PDP - Procurement Data Package
 PE - Potential Excess
 PEB - Pre-Expended Bin
 PEO - Program Executive Officer
 PEO Theater Surface Combatants - Program Executive Officer for Theater Surface Combatants
 PERA - Planning, Engineering, Repair and Alteration
 PHS&T - Packaging, Handling, Storage and Transportability
 PICA - Primary Inventory Control Activity
 PIP - Product Improvement Program
 PM - Program Manager
 PMCS - Partial Mission Capable Supply
 PMRC - Prepositioned Material Receipt Card
 PME - Precision Measuring Equipment
 PMRM - Periodic Maintenance Requirement Manual
 PMS - Planned Maintenance System
 PO - Program Objective
 POA&M - Plan of Action and Milestones
 POE - Point of Entry
 POL - Petroleum, Oil and Lubricant
 POM - Program Objective Memorandum
 PPBS - Planning, Programming and Budgeting System
 PP&C - Production Planning and Control
 PPS - Procurement and Production Status
 PPWR - Prepositioned War Reserve
 PSICP - Programs Support Inventory Control Point
 PQS - Personnel Qualification Standards
 P/R/P FILE - Procurement/Renovation/Production File
 PSP - Performance Standards Program
 PTT - Parts Task Trainer
 PWRMR - Prepositioned War Reserve Material Requirement
 PWRMR - Prepositioned War Reserve Material Stock
 PWRR - Prepositioned War Reserve Requirement
 PWRS - Prepositioned War Reserve Stock
 Q&RA - Quality and Reliability Assurance
 QA - Quality Assurance
 QA/A - Quality Assurance/Analysis
 QALI - Quality Assurance Letter of Instruction

QAP - Quality Assurance Provisions
 QATIP - Quality Assurance Test and Inspection Plan
 QAR - Quality Assurance Representative
 QDEAS - Quality Deficiency Evaluation Analysis System
 QDR - Quality Deficiency Report
 QE - Quality Evaluation
 QEA - Quality Evaluation Activities
 QEP - Quality Evaluation Plan
 QUAL/CERT - Qualification/Certification
 [R] - Revision
 RADHAZ - Radiation Hazards
 RATO - Rocket Assisted Takeoff
 RAV - Restricted Availability
 RCA - Request for Contractual Authorization
 RCM - Reliability Centered Maintenance
 RCN - Report Control Number
 RCRA - Resource Conservation and Recovery Act
 R&D - Research and Development
 RDD - Required Delivery Date
 RDJTF - Rapid Deployment Joint Task Force
 RDT&E - Research, Development, Test and Evaluation
 RDT&EN - Research, Development, Test and Evaluation, Navy (appropriation)
 RECTYP - Record Type
 RF - Radio Frequency
 RFD - Request for Deviation
 RFI - Ready for Issue
 RFIO - Ready for Issue Objective
 RFW - Request for Waiver
 RIC - Routing Identifier Code
 RIE - Requisition in English
 RIK - Replacement in Kind
 RISCERS - Raster Image, Storage, Conversion, and Retrieval System
 RIW - Reliability Improvement Warranty
 RMA&Q - Reliability, Maintainability, Availability, and Quality Analysis
 RMS - Resource Management Systems
 ROD - Report of Discrepancy
 ROLMS - Retail Ordnance Logistics Management System
 ROR - Repair of Repairables
 RPV - Remotely Piloted Vehicle
 RSI - Repairable of Support Inventory
 RSS&I - Receipt, Segregation, Storage, and Issue
 SA - Security Assistance
 SAC - Senate Appropriations Committee
 SAF - Support Action Form
 SAL - Standing Approval List
 SALTS - Streamlined Alternative Logistics Transmitting System
 SAMC - Security Assistance Management Control
 SAP - Security Assistance Program
 SAPDO - Special Accounts Property Disposal Officer
 SAS - Stored Ashore Stock

SASC - Senate Armed Services Committee	SUADPS - Shipboard Uniform Automated Data Processing System
SC - Surveillance Coordinator	SUF - Suffix
SCAAIR - Standardized Conventional Ammunition Automated Inventory Record System	SUS - Signal Underwater Sound
SCIR - Subsystem Compatibility Impact Reporting	SWOS - Surface Warfare Officer's School
SCG - Storage Compatibility Group	SWT - Surface Wide Transportation
SCN - Specification Change Notice	SYSCOM - Systems Command
SDAF - Special Defense Acquisition Fund	TA - Tasking Authority
SDAN - Source Data Automation Network	TAE - Ammunition Ship
SDPDA - Special Defense Property Disposal Account	TADM-001 - Technical Documentation Accounting Module
SDR - Supply Demand Review	TALD - Tactical Air Launched Decoy
SDS - Standard Depot System	TAMMS - Total Ammunition Movement Management System
SECA - Support Equipment Controlling Authority	TASIG - Target Availability Support Improvement Group
SECDEF - Secretary of Defense	TCC - Type Container Code
SECNAV - Secretary of the Navy	TCES - Technical Center for Explosives Safety
SECT - Submarine Emergency Communications Transmittals	TCMD - Transportation Control and Movement Document
SF - Standard Form	TCN - Transportation Control Number
SER - Serial	TD - Technical Directive
SERD - Support Equipment Recommendation Data	TDA - Technical Direction Agent
SERMIS - Support Equipment Resources Management Information System	TDP - Technical Data Package
SFM-005 - Support Functions Module	TDR - Transportation Discrepancy Report
SHORCAL - Shore-based Consolidated Allowance List	TEC - Type Equipment Code
SIA - Systems Integration Agent	TECHEVAL - Technical Evaluation
SICA - Secondary Inventory Control Activity	TER - Triple Ejector Rack
SIMA - Shore Intermediate Maintenance Activity	TFOA - Things Falling Off Aircraft
SIMSL - Shore Intermediate Maintenance Support List	TIC - Technician-in-Charge
SIN - Scrap Identification Number	TIR - Transaction Item Report
SIP - State Implementation Plan	TLM Code - Telemetry Code
SISR - Selected Item Status Report	TMDC - Type Maintenance Due Code
SIST - Serviceable In-Service Time	TMDER - Technical Manual Deficiency/Evaluation Report
SLAC - Shelf-life Action Code	TMMA - Technical Manual Maintenance Activity
SLAMS - Surveillance Lot Acceptance & MAERU (Test Database) System	TMMP - Technical Manual Maintenance Program
SLC - Shelf-life Code	TOW - Tube Launched Optically Tracked Wire Guided Missile
SLIT - Serial/Lot Item Tracking	TP - Target Practice
SM - Satellite Motor Surveillance System	TPFDD - Time Phased Force Deployment Data
SMCA - Single Manager for Conventional Ammunition	TPDR - Technical Publication Deficiency Report
SM&R - Source, Maintenance and Recoverability	TPL - Technical Publications Library
SMIC - Special Material Identification Code	TYCOM - Type Commander
SNAP-1 - Shipboard Non-tactical ADP Program	UADPS - Uniform Automated Data Processing System
SOC - Special Operations Command	UADPS-SP - Uniform Automated Data Processing System - Stock Point
SOP - Standard Operating Procedure	UI - Unit of Issue
SOS - Source of Supply	UIC - Unit Identification Code
SPC - Shop Process Card	UICP - Uniform Inventory Control Point
SQL - Structured Query Language	UMMIPS - Uniform Material Movement and Issue Priority System
SRC - Scheduled Removal Component	UND - Urgency of Need Designator
SRCE Code - Source Code	UNO - United Nations Organization
SRF - Ship Repair Facility	UNK - Unknown
SSC - Supply Support Center	UNREP - Underway Replenishment
SSP - Strategic Systems Program	USCINCEUR - Commander in Chief, U.S. European Command
STANAG - Standardization Agreement	
STARS - Standard Accounting and Reporting System	

USA - United States Army
USN - United States Navy
USADACS - U. S. Army Defense Ammunition Center and School
USAF - United States Air Force
USATCES - U. S. Army Technical Center for Explosives Safety
USCG - United States Coast Guard
USMC - United States Marine Corps
VT - Variable Time
VDAR - Vendor Data Analysis Report
VERTREP - Vertical Replenishment
VIDS - Visual Information Display System

VIDS/MAF - Visual Information Display System/
Maintenance Action Form
WPNSTA - Weapons Station
WPN - Weapons Procurement, Navy (appropriation)
WQAEC - Weapons Quality Assurance Evaluation Center
WR - Work Request
WRMR - War Reserve Material Requirement
WSESRB - Weapon System Explosives Safety Review Board
WUA - Work Unit Assignment
WSE - Weapon Support Equipment
WUC - Work Unit Code

APPENDIX D

Serviceable In-Service Time/ Service Life Designations for Airborne Weapons

APPENDIX D**Serviceable In-Service Time/Service Life
Designations for Airborne Weapons****Table of Contents**

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APPENDIX D

Serviceable In-Service Time/Service Life Designations for Airborne Weapons

D1 Introduction

a. This appendix tabulates the current Serviceable In-Service Time (SIST) and service life of airborne weapons. Since the reliability of components is continually being monitored through quality evaluation testing programs, component service lives and SISTs designated herein may change periodically. Official change pages to this appendix will be distributed as changes occur.

D2 Definitions

a. **Installed Life.** The period of time an item is allowed to be used after its hermetically sealed container is opened, however, the installed life expiration date shall never exceed the shelf life expiration date. The installed life expiration date is computed from the date the hermetically sealed container is opened, and is always computed to the day of the month involved.

b. **Service Life.** The period of time during which an item can be used with an ensured high degree of reliability. Performance of the item is influenced by the environment to which it is exposed. These time limits are defined as shelf life and installed life. Shelf life and installed life are not combined.

c. **Shelf Life.** The period of time beginning from the date of manufacture that an item can remain in its hermetically sealed container and still be serviceable. The shelf life expiration date shall always be computed from the date of manufacture available from the lot number for the assembled item.

d. **Serviceable In-Service Time.** SIST is defined as the period of time an air launched missile may remain in operational use or storage before its internal electronic or mechanical components require a test or maintenance action at a naval weapons support facility or naval airborne weapons maintenance unit to validate suitability for operational use. The SIST clock starts with the latest date the missile was tested by a naval weapons support facility or naval airborne weapons maintenance unit.

e. **Reliability Centered Maintenance (RCM).** RCM is a disciplined methodology to collect empirical data through

stratified sampling of total inventory to predict maximum maintenance periodicity to optimize the inherent reliability of weapons energetics and electronics. All up rounds (AUR) and subcomponents without a specified SIST shall be considered RCM pending determination of recertification through QEP surveillance.

f. **Maintenance Due Date (MDD).** MDD is defined as the date an air launched missile or component must be returned to a naval weapons support facility or naval airborne weapons maintenance unit for testing. The MDD is established by adding SIST to the latest test date, but may not exceed the date that an internal component's service life will expire.

NOTE

Most reporting systems allow for only a month/year field for the MDD. The MDD will expire on the last day of the month, after the Date of Last Test (DOLT) plus SIST is calculated.

g. All maintenance activities involved in the repair or maintenance of age-sensitive U.S. Navy air launched missiles or missile component sections, shall, upon restoration of such assets to serviceable condition code A, ascertain the next inspection due or overage dates as specified herein, and complete the appropriate block of the DD 1574 Serviceability Tags accordingly.

h. Upon receipt of new production assets for which maintenance due dates cannot be determined from serviceability tag information, naval weapons support facility and naval airborne weapons maintenance units are authorized to calculate these dates by adding the applicable SISTs, as designated herein, to the date of acceptance of the assets by authorized government agents as indicated in block 21A of the material inspection and receiving report (DD 250) which accompanies all such assets.

D3 JDAM Service Life-Life Expectancy Out-of-Container. Service life is the length of time the guidance sets are not in prescribed protective storage in the CNU-589/E container. Service life will generally apply to guidance sets assembled to a war head for extended periods of time. Service life begins when the container is opened and stops when the guidance set is repackaged in its container in a sealed and

desiccated vapor barrier. Service life will not accumulate when the container is opened and closed within 24 consecutive hours. Guidance set service life is determined under the following storage conditions:

a. Service Life - Land Based (USAF, USN Ashore)

Service Life for land based items is 5 years with a maximum duration in unsheltered storage of 6 months.

b. Service Life - Afloat. Service life for afloat based items is 5 years with a maximum duration of flight deck exposure of 30 days. The build-up weapon cycle will not exceed the duration of the carrier deployment.

D4 ALM CATS/TRAPS, Flight Limitations.

(a) JSOW has a Cats/Traps Limitation as listed :

1. AGM-154A all NALCs 50 Cats/Traps.
2. AGM-154B all NALCs 50 Cats/Traps.
3. AGM-154C all NALCs 50 Cats/Traps.

All JSOW Weapons will be placed in Condition Code "B" when 40 Cats/Traps have been logged.

(b) JSOW Flight Hour Limitations as listed:

1. AGM-154A all NALCs 300 Hours.
2. AGM-154B all NALCs 300 Hours.
3. AGM-154C all NALCs 300 Hours.

(c) HARM Missile AGM-88C (NALC PU06/WF22) captive carry a maximum of 250 hours shall be placed in Condition Code J and returned to a Maintenance/Depot Activity.

D5 JSOW Shelf Life And Service Life. JSOW does not have a SIST. It has a Shelf Life and a Service Life. The Shelf Life starts at the Date of Manufacture (DOM) and ends when the container is opened. The Service Life starts with the opening of the container for the AGM-154B/C.

D6 Procedures for Implementing SIST or Service Life Changes

NOTE:

The holding activity shall be solely responsible for accomplishing the SIST extension and reporting back to NAVAMMOLOGCEN. NAVAIRWAR-CENWPNDIV detachments shall be responsible for monitoring compliance of activities under their purview.

a. Upon receipt of a change to the published SIST or service life, a new MDD must be implemented for each serial numbered all-up-round. To accomplish this in the most efficient and expeditious manner for all concerned, the method described below will be followed.

b. All-up-round AUR missiles that have already been down graded to an unserviceable status for an expired MDD typically are not upgraded to a serviceable status even if the SIST change would have generated a MDD enabling the missile to be serviceable. In many instances, serviceable missiles will not have their existing MDDs extended. To preclude these events from occurring, the NAVAIRWAR-CENWPNDIV detachments will continually monitor missile assets at the Weapons Stations or activities under their purview. The detachment personnel will ensure that those missiles requiring a change to their MDD, have all necessary steps taken to tags, bar codes, documentation, stenciling, and reporting of status change to reflect the new MDD.

c. Weapons Stations or Naval Airborne Weapons Maintenance Units shall compute MDDs based on the new SIST or service life for all missiles tested and certified after receipt of an official change to this appendix.

d. For JDAM, contact the FST for disposition instructions when Guidance Set has 6 months service life remaining.

D7 Procedure for Requesting MDD Extensions

a. Fleet missile users have occasion to request an MDD extension when operational considerations will not allow return of missiles to a naval weapons support facility or naval airborne weapons maintenance unit for maintenance. Although operational commanders, type commanders, or a fleet commander in chief may elect to retain missiles on-loaded beyond the MDD to meet operational requirements, the commander does this with a risk of operating missiles with reduced reliability.

b. The following guidelines for MDD extensions for 8E cognizance air launched missiles (including RIM-7 SEASPARROW, RGM-84 surface, and UGM-84 submarine launched HARPOON) must be used to preclude misrouting.

c. When operational situations dictate, fleet users must request an MDD extension from the appropriate operational commander or type commander with information copies of the request sent to COMNAVAIRSYSCOM, NAVAIRWAR-CENWPNDIV and the NASTA Corona CA. The request must include the following information:

(1) The custodian or accountable activity of missiles for which the extension is requested.

(2) Missile information:

Type Model Series	Number	Current MDD (Month/Year)	Requested MDD (Month/Year)
XXX XX XX	XXXX	XXXXX	XXXX

(3) Reason for requested extension.
For example:

(a) To be fired during exercise scheduled for (date).

(b) Required for completion of deployment to be completed (date).

d. The appropriate operational commander will review the request and is authorized to grant an extension for up to 90 days from the original MDD. To minimize safety and reliability risks, extensions will not exceed 90 days. For extensions required to go beyond 90 days, the operational or type commander must forward the request directly to NAVAIRSYSCOM. NAVAIRSYSCOM will respond to the requesting activity and will either approve or disapprove the MDD extension. The responding message will identify each serial number in the original request and include the approval date the missile is extended to or appropriate rationale for disapproval of the MDD extension request. The same message addressee on the original MDD request will be included as an information addressee on all responses regarding MDD extension approvals, disapprovals, or other information required to resolve the MDD extension request.

D8 MDD Extensions for ALM on Maritime Prepositioning Ships (MPS)

a. Considering the SIST intervals for those ALMs and the benign storage environment aboard MPS ships, no appreciable degradation of missile performance is anticipated if established MDDs are extended to the length of the current MPS cycle. Personnel involved in loading ALMs aboard MPS ships may extend MDDs to the end of the next planned MPS maintenance cycle, provided that the present remaining SIST prior to expiration of the MDD is not less than 50 percent of the present MPS cycle. For example, if a MPS maintenance cycle is 30 months, 50 percent of 30 months is 15 months. Therefore, if an ALM has 15 months or more remaining of its SIST, it is eligible to be a MPS candidate.

b. Ensure that an appropriate ATR is submitted to reflect the new MDD in the CAIMS database, after MDD have been extended. Liaison must be established with the inventory manager and the issuing activity to ensure that weapons earmarked for MPS will meet 80% criteria.

D9 Service Life Designations

a. Service life designations for cartridge actuated devices may be found in NAVAIR 11-100-1.

b. Service life designations for propulsion actuated devices may be found in NAVAIR 11-85-1. Service life data by propulsion actuated devices lot number may be obtained by contacting Naval Surface Warfare Center Division, Indian Head.

D10 Service Life Validation. Program managers shall review respective DoDIC/NALC service life limitations listed in this Appendix annually and provide letter of validation/changes to chair, Quality Evaluation Executive Steering Panel (QEESP).

ALL-UP-ROUNDS

TYPE/MODEL/SERIES	NOMENCLATURE	DODIC/NALC OR PART NO.	SIST
<u>SPARROW</u>			
AIM-7E-2	GM Trng Sqt TM BPD	DW29, DW30, DW31	30 mo.
AIM-7E-2	GM Trng	HW67, HW68, HW69, HW70, HW71, HW72, HW73, HW74	30 mo.
AIM-7E-2	GM	PA17	30 mo.
AIM-7E-2	GM BPD	PA25	30 mo.
AIM-7E-3	GM Trng	HW75, HW76, HW77, HW78, HW79, HW80, HW81, HW82	30 mo.
AIM-7E-3	GM	PA43	30 mo.
AIM-7E-4	GM Trng	HW83, HW84, HW85, HW86, HW87, HW88, HW89, HW90	30 mo.
AIM-7E-4	GM	PA68	30 mo.
RIM-7E-5	GM BPD	PA69	30 mo.
RIM-7E-5	GM Trng Sqt TM BPD	ZW90, ZW91, ZW92	30 mo.
AIM-7E-6	GM	PA48	30 mo.
AIM-7F-(ALL)	GM	PA71	30 mo.
ATM-7F-6-1	GM Trng	FW67	30 mo.
ATM-7F-6-2	GM Trng	FW68	30 mo.
ATM-7F-6-3	GM Trng	FW69	30 mo.
ATM-7F-6-4	GM Trng	FW70	30 mo.
ATM-7F-6-5	GM Trng	FW71	30 mo.
ATM-7F-6-6	GM Trng	FW72	30 mo.
ATM-7F-6-7	GM Trng	FW73	30 mo.
ATM-7F-6-8	GM Trng	FW74	30 mo.
ATM-7F-6-9	GM Trng	FW75	30 mo.
AIM-7F-11	GM	PA74	30 mo.
RIM-7H-5	GM IPD	PA70	30 mo.
RIM-7H-5	GM Trng Sqt TM IPD	ZW93, ZW94, ZW95	30 mo.
AIM-7M	GM	PB66	60 mo.
ATM-7M	GM Trng	PB72, PD07	60 mo.
RIM-7M	GM	PB67, PV72	42 mo.
RIM-7M	GM (VL)	PV71	42 mo.
RTM-7M	GM Trng	PB76, PD15	42 mo.

ALL-UP-ROUNDS (Cont'd)

TYPE/MODEL/SERIES	NOMENCLATURE	DODIC/NALC OR PART NO.	SIST
SPARROW (Cont'd)			
AIM-7M	GM (H-Build)	PV70	60 mo.
AIM-7P	GM (Blk I)	PV21	60 mo.
AIM-7P	GM (Blk II)	PV22	60 mo.
RIM-7P	GM (VL) (Blk II)	PU04, PU95	42 mo.
ATM-7M-5 thru 12	GM Trng	PU01	60 mo.
ATM-7M-13 thru 20	GM Trng (H-Build)	PU02, PV13	60 mo.
RIM-7P	GM (Blk I)	PE42	42 mo.
RIM-7P	GM (Blk IIA)	PE43, PU96	42 mo.
RTM-7M-13 thru 20	GM Trng (H-Build)	PV14	42 mo.
ATM-7P	GM Trng (BLK I)	PU57	60 mo.
ATM-7P	GM Trng (BLK II)	PU59	60 mo.
RTM-7M	GM Trng (VL)	PU62	42 mo.
RTM-7M	GM Trng (VL)	PU63	42 mo.
RTM-7P	GM Trng (BLK I)	PU58	42 mo.
RTM-7P	GM Trng (BLK II)	PU60, PU78	42 mo.
RTM-7P	GM Trng (VL) (BLK II)	PU61, PU79	42 mo.

ALL-UP-ROUNDS (Cont'd)

TYPE/MODEL/SERIES	NOMENCLATURE	DODIC/NALC OR PART NO.	SIST
<u>SIDEWINDER</u>			
ATM-9H-1	GM Trng	TBD	62 mo.
AIM-9H-2/3	GM	PA34	62 mo.
ATM-9H-3	GM Trng	QW67	62 mo.
ATM-9H-4	GM Trng	PD23, PV41	62 mo.
ATM-9H-9	GM Trng	ZW47	NONE
AIM-9M-1	GM	PB55, PV66	62 mo.
NATM-9M-1	GM Trng	PC64, PV42	62 mo.
NATM-9M-2	GM Trng	PC65, PV43	62 mo.
NATM-9M-3	GM Trng	PC66	62 mo.
CATM-9M-1	GM Trng	PC60	NONE
CATM-9M-2/4/6/8/12/14	GM Trng	PC61, PV44, BWBT, BWBS PU70, PU71	NONE
DATM-9L-1	GM Dummy	1W12	NONE
AIM-9M-3	GM	PC47, PV67	62 mo.
AIM-9M-4	GM	PV74	62 mo.
AIM-9M-5	GM	PV75	62 mo.
AIM-9M-6	GM	PV76	62 mo.
AIM-9M-7	GM	PV77	62 mo.
AIM-9M-8	GM	PV89	62 mo.
GDU-1A	GM Dummy	QW64	NONE
GDU-6C	GM Gnd Trng	FW66	NONE

ALL-UP-ROUNDS (Cont'd)

TYPE/MODEL/SERIES	NOMENCLATURE	DODIC/NALC OR PART NO.	SIST
<u>PHOENIX</u>			
AIM-54A	GM	PA42, PA50, PA51, PA52, PA53, PA54, PA55, PA56, PA57, PA58, PA59, PA60, PA61, PA62, PA63, PA64, PA65	36 mo.
AIM-54C	GM	PB35, PB36, PB37, PB38, PB39, PB40, PB41, PB42, PB43, PB44, PB45, PB46, PB47, PB48, PB49, PB50, PB51	36 mo.
AIM-54C	GM	PC30, PC31, PC32, PC33, PC34, PC35, PC36, PC37, PC38, PC39, PC40, PC41, PC42, PC43, PC44, PC45, PC46	36 mo.
AIM-54C SEALED	GM	PC67, PC68, PC69, PC70, PC71, PC72, PC73, PC74, PC75, PC76, PC77, PC78, PC79, PC80, PC81, PC82, PC83, PV49, PV50, PV51, PV52, PV53, PV54, PV55, PV56, PV57, PV58, PV59, PV60, PV61, PV62, PV63, PV64, PV65	36 mo.
AEM-54A-1, 2, 3	GM Eval	FW76, FW77, FW78	36 mo.
AEM-54A-7	GM Eval	4W40	36 mo.
AEM-54A-8	GM Eval	4W41	36 mo.
AEM-54A-9	GM Eval	4W42	36 mo.
CATM-54C	GM TRNG	PU22	NONE
CATM-54C	GM TRNG	PU23	NONE
CATM-54C	GM TRNG	PU24	NONE
CATM-54C	GM TRNG	PU25	NONE
ATM-54A-3	EXER	PU26	36 mo.
AEM-54C	EXER	BWAG	36 mo.
AEM-54C	EXER	BWAI	36 mo.
AEM-54C	EXER	BWAJ	36 mo.

ALL-UP-ROUNDS (Cont'd)

TYPE/MODEL/SERIES	NOMENCLATURE	DODIC/NALC OR PART NO.	SIST
<u>WALLEYE</u>			
MK 1 MOD 0	GW I	E220	RCM
MK 1 MOD 6	GW I	E218	RCM
MK 1 MOD 7	GW I	E219	RCM
MK 1 MOD 8	GW I	E228	RCM
MK 1 MOD 9	GW I	E229	RCM
MK 2 MOD 0	GW I Prac	E222	NONE
MK 4 MOD 6	GW I Prac	E254	NONE
MK 4 MOD 7	GW I Prac	E258	NONE
MK 5 MOD 4	GW II	E246	78 mo.
MK 21 MOD 1	GW ERDL I	E002	66 mo.
MK 21 MOD 2	GW ERDL I	E003	66 mo.
MK 21 MOD 3	GW ERDL I	E004	66 mo.
MK 21 MOD 4	GW ERDL I	E005	66 mo.
MK 21 MOD 5	GW ERDL I	E006	66 mo.
MK 21 MOD 6	GW ERDL I	E007	66 mo.
MK 21 MOD 7	GW ERDL I	E008	66 mo.
MK 21 MOD 8	GW ERDL I	E009	66 mo.
MK 21 MOD 9	GW ERDL I	E010	66 mo.
MK 21 MOD 10	GW ERDL I	E011	66 mo.
MK 21 MOD 11	GW ERDL I	E012	66 mo.
MK 23 MOD 2	GW ERDL II	E284	78 mo.
MK 23 MOD 0	GW ERDL II	E282	78 mo.
MK 23 MOD 1	GW ERDL II	E283	78 mo.
MK 23 MOD 3	GW ERDL II	E285	78 mo.
MK 23 MOD 4	GW ERDL II	E286	78 mo.
MK 23 MOD 5	GW ERDL II	E287	78 mo.
MK 27 MOD 3	GW Prac ERDL I	E259	NONE
MK 27 MOD 4	GW Prac ERDL I	E030	NONE
MK 27 MOD 5	GW Prac ERDL I	E031	NONE
MK 29 MOD 0	GW I Phase II	E417	66 mo.
MK 29 MOD 1	GW I Phase II	E418	66 mo.
MK 29 MOD 2	GW I Phase II	E419	66 mo.
MK 29 MOD 3	GW I Phase II	E421	66 mo..
MK 29 MOD 4	GW I Phase II	E422	66 mo.

ALL-UP-ROUNDS (Cont'd)

TYPE/MODEL/SERIES	NOMENCLATURE	DODIC/NALC OR PART NO.	SIST
<u>WALLEYE (Cont'd)</u>			
MK 29 MOD 5	GW I Phase II	E423	66 mo.
MK 29 MOD 6	GW I Phase II	E424	66 mo.
MK 29 MOD 7	GW I Phase II	E425	66 mo.
MK 29 MOD 8	GW I Phase II	E426	66 mo.
MK 29 MOD 9	GW I Phase II	E427	66 mo.
MK 29 MOD 10	GW I Phase II	E428	66 mo.
MK 29 MOD 11	GW I Phase II	E429	66 mo.
MK 29 MOD 12	GW I Phase II	E430, E443	66 mo.
MK 29 MOD 13	GW I Phase II	E431, E444	66 mo.
MK 29 MOD 14	GW I Phase II	E432, E445	66 mo.
MK 29 MOD 15	GW I Phase II	E433, E446	66 mo.
MK 29 MOD 16	GW I Phase II	E434, E447	66 mo.
MK 29 MOD 17	GW I Phase II	E436, E448	66 mo.
MK 29 MOD 18	GW I Phase II	E437, E449	66 mo.
MK 29 MOD 19	GW I Phase II	E438, E452	66 mo.
MK 29 MOD 20	GW I Phase II	E439	66 mo.
MK 29 MOD 21	GW I Phase II	E440	66 mo.
MK 29 MOD 22	GW I Phase II	E441	66 mo.
MK 29 MOD 23	GW I Phase II	E442	66 mo.
MK 30 MOD 0	GW II Phase II	E453	78 mo.
MK 30 MOD 1	GW II Phase II	E454	78 mo.
MK 30 MOD 2	GW II Phase II	E455	78 mo.
MK 30 MOD 3	GW II Phase II	E459	78 mo.
MK 30 MOD 4	GW II Phase II	E524	78 mo.
MK 30 MOD 5	GW II Phase II	E525	78 mo.
MK 30 MOD 6	GW II Phase II	E526	78 mo.
MK 30 MOD 7	GW II Phase II	E527	78 mo.
MK 30 MOD 8	GW II Phase II	E528	78 mo.
MK 30 MOD 9	GW II Phase II	E529	78 mo.
MK 34 MOD 0	GW I Phase II	E534	66 mo.
MK 34 MOD 1	GW I Phase II	E535	66 mo.
MK 34 MOD 2	GW I Phase II	E537	66 mo.
MK 34 MOD 3	GW I Phase II	E538	66 mo.

ALL-UP-ROUNDS (Cont'd)

TYPE/MODEL/SERIES	NOMENCLATURE	DODIC/NALC OR PART NO.	SIST
<u>WALLEYE (Cont'd)</u>			
MK 34 MOD 4	GW I Phase II	E539	66 mo.
MK 34 MOD 5	GW I Phase II	E541	66 mo.
MK 34 MOD 6	GW I Phase II	E542	66 mo.
MK 34 MOD 7	GW I Phase II	E543	66 mo.
MK 34 MOD 8	GW I Phase II	E544	66 mo.
MK 34 MOD 9	GW I Phase II	E545	66 mo.
MK 37 MOD 0	GW II Phase II	E559	78 mo.
MK 37 MOD 1	GW II Phase II	E563	78 mo.
MK 37 MOD 2	GW II Phase II	E564	78 mo.
MK 37 MOD 3	GW II Phase II	E567	78 mo.
MK 37 MOD 4	GW II Phase II	E568	78 mo.
MK 38 MOD 0	GW I Phase I Prac	E027	NONE
MK 38 MOD 1	GW I Phase I Prac	E028	NONE
MK 38 MOD 2	GW I Phase I Prac	E029	NONE
MK 39 MOD 0	GW I Phase II Prac	EA04	NONE
MK 39 MOD 1	GW I Phase II Prac	EA05	NONE
MK 39 MOD 2	GW I Phase II Prac	EA06	NONE

NOTE: All WALLEYE variants used for NON-Combat Expenditure Allowance (NCEA) shall have an RCM SIST. WALLEYE used for combat shall have a SIST of 66 Mo or 78 Mo as indicated above.

ALL-UP-ROUNDS (Cont'd)

TYPE/MODEL/SERIES	NOMENCLATURE	DODIC/NALC OR PART NO.	SIST
<u>HARPOON</u>			
AGM-84D-1	GM Tact	PD84, PE02, PE39	RCM
ATM-84D-1	GM Exer Air	PE41, PE62, PD50, PFCO, PFC1	RCM
CATM-84D-1	CATM	BWCF	NONE
CATM-84D-2 (Enhanced)	CATM	BWEW	NONE
RGM-84D-2	GM Tartar	PE13, PE14, PE15	RCM
RGM-84D-4	GM Can SH RES	PE24, PE25, PE26	RCM
RGM-84D-5	GM Can TH Wall	PE29, PE30, PE31	RCM
RTM-84D-2	GM Exer Tartar	PE72, PE73, PE74, PFC2, PFC3	NONE
RTM-84A-2B	GM Trng Tartar (CTV)	JW94	NONE
RTM-84A-2C	GM Trng Tartar (BTV)	JW98	NONE
RGM-84D-4	GM Can SH RES	PE24, PE25, PE26	RCM
RTM-84D-4	GM Exer Can SH RES	PE79, PE85, PE86, PFD1, PFD2	NONE
RTM-84A-4B	GM Trng Can SH RES (CTV)	UW99	NONE
RTM-84A-4C	GM Trng Can SH RES (BTV)	JW90	NONE
RTM-84D-5	GM Exer Can TH Wall	PE88, PE89, PE90, PFD3, PFD4	NONE
RTM-84A-5B	GM Trng Can Th Wall (CTV)	BWBR	NONE
UGM-84D-1	GM Encap	PE33, PE34, PE35	60 MOS
UTM-84D-1	GM Exer Encap	PE92, PE93, PE94, PFC6, PFC7	60 MOS
UTM-84A-1D	EHCTV	72A356525-1011	RCM
BGM-84D-1	GM Tact Cap/Can	4W56, 4W57, 4W58	RCM
BTM-84D-1	GM Exer Cap/Can	4W52, 4W53, 4W54, BWFJ, BWFK	RCM
BTM-84A-1B	CTV	79-5043-2109	RCM
GM-84D-1	HMB Tact	3W99, 4W13, BWDY	RCM
GM-84D-1A	HMB Tact	3W99, 4W13, BWDY	RCM
TM-84D-1	HMB Exer	3W98, 4W16, BWDZ	NONE
TM-84D-1B	HMB Exer	3W98, 4W16, BWFN, BWFO, BWDZ	NONE

NOTE: UGM-84D-1 and UTM-84D-1 Missiles shall require full recertification prior to fleet issue when removed from deep stowage.

ALL-UP-ROUNDS (Cont'd)

TYPE/MODEL/SERIES	NOMENCLATURE	DODIC/NALC OR PART NO.	SIST
<u>STANDOFF LAND ATTACK MISSILE (SLAM)</u>			
AGM-84E-1C	GM Tact.	PU52	RCM
ATM-84E-1C	GM Exer	PU53	NONE
ATM-84E-1C	GM Exer (IES)	PFD0	NONE
CATM-84E-1C	CATM	PU54	NONE
<u>STANDOFF LAND ATTACK MISSILE EXPANDED RESPONSE (SLAM-ER)</u>			
AGM-84H-1	GM Tact.	PFE5	60 mos.
AGM-84H-1	GM Tact.	WF30	60 mos.
AGM-84H-1	GM Tact.	WF35	60 mos.
ATM-84H-1	GM Exer.	PFE3	60 mos.
ATM-84H-1	GM Exer.	WF31	60 mos.
ATM-84H-1	GM Exer.	WF36	60 mos.
CATM-84H-1A	CATM	PFE4	NONE
CATM-84H-1A	CATM	WF32	NONE
CATM-84H-1A	CATM	WF34	NONE

ALL-UP-ROUNDS (Cont'd)

TYPE/MODEL/SERIES	NOMENCLATURE	DODIC/NALC OR PART NO.	SIST
<u>HARM</u>			
AGM-88A	Tactical	PB24, PC92, PC93, PC94	RCM
AGM-88B	Tactical	PD64, PV07, WF20	RCM
AGM-88B	Tactical (Blk III)	PD65, PV08, PV91, PV98, WF21	RCM
AGM-88C	Tactical	PFE2, PU06, PV99, WF22	RCM
ATM-88B	Training (Blk III)	PFB2, WF19	NONE
CATM-88A	Training	KW02, PD27, PD28, PD26	NONE
CATM-88B	Training	PD29, PD30, PV09, PV10, WF23, WF24	NONE
CATM-88C	Training	PU37, PFE1, WF18	NONE
DATM-88A	Dummy	LW07	NONE

NOTE: HARM Missile AGM-88C (NALC PU06/WF22) captive carried a maximum of 250 hours shall be placed in condition code J and returned to a Maintenance/Depot Activity.

MAVERICK

AGM-65E	Guided Missile Surface Attack Laser	PB69	RCM
AGM-65F	Guided Missile Surface Attack Imaging Infrared	PD63	72 mo.
LDT	Load Drill Training Missile	2W90	N/A
TGM-65E	Training Guided Missile Laser	3W70	NONE
CATM-65F	Captive Air Training Missile IR	PY15	NONE
LTGM-65E	Light Weight Training Missile Laser	CWLJ	NONE
LCATM-65F	Light Weight Captive Air Training Missile IR	CWLI	NONE

HELLFIRE

AGM-114B	Guided Missile Surface Attack	PC91	RCM
M34	Dummy Guided Missile	2W59	NONE
M36E1	Training Guided Missile	5W98	NONE
AGM-114K	Guided Missile Surface Attack Duel Warhead	PV30	RCM
AGM-114K-2	Guided Missile Surface Attack Insensitive Munitions Warhead	PU72	RCM
AGM-114M	Guided Missile Surface Attack Blast Fragmentation Warhead	WF15	RCM
M36E3	Training Guided Missile	CWKK	NONE

ALL-UP-ROUNDS (Cont'd)

TYPE/MODEL/SERIES	NOMENCLATURE	DODIC/NALC OR PART NO.	SIST
<u>PENGUIN</u>			
AGM-119B MK 2 MOD 7	GM-Tactical	PV06	36 mo.
TAGM-119B	GM-Exercise	TBD	36 mo.
CATM-119B	GM-Training	TBD	NONE
<u>SIDEARM</u>			
AGM-122/A	GM Tactical I	PC06	RCM
ATM-122/A	GM Training	PV92	NONE
CATM-122/A	GM Training	PV40	NONE
<u>AMRAAM</u>			
AIM-120A	GM Tactical	PU45	RCM
AIM-120A	GM Tactical	PU46	RCM
AIM-120B	GM Tactical	PU50	RCM
AIM-120C	GM Tactical	PU69	RCM
AIM-120C-4	GM Tactical	PFD7	RCM
AIM-120C-5	GM Tactical	WF41	RCM
CATM-120A	GM Training	PY78	NONE
CATM-120B	GM Training	PY97	NONE
JAIM-120A	GM Instumented	PV85	RCM
JAIM-120B	GM Instumented	PU74	RCM
JAIM-120C	GM Instumented	PU73	RCM
<u>JOINT STAND-OFF WEAPON (JSOW) AGM-154</u>			
AGM-154A	GM Tact	3181AS11000-1/PFB7	RCM
AGM-154A	GM Tact	4211053-1/PFB8	RCM
AGM-154A	GM Tact	4211053-2/PFB8	RCM
AGM-154A	GM Tact	4211053-3/PFB8	RCM
AGM-154A	GM Tact	4211009-3/PFB8	RCM
AGM-154A	GM Tact	4211027-1/WF26	RCM
AGM-154A	GM Trainer	3181AS11000-6/PFB9	RCM
AGM-154B	GM Tact	TBD	RCM
AGM-154B	GM Tact	TBD	RCM
AGM-154C	GM Tact	TBD	RCM
AGM-154C	GM Tact	TBD	RCM

SPARROW AIM/RIM-7

TYPE OR MARK/MOD	NOMENCLATURE	DODIC/NALC OR PART NO.	SERVICE LIFE	USED ON
	G & C Group	PM15, PM16	Not Applicable	AIM-7E
TAAM-N-6A/6B	G & C Group	PW27	Not Applicable	AIM-7D, 7E
OA-8878A/D	Flt Cntl Group	YW59	Not Applicable	AIM-7F-5
OA-8878B/D	Flt Cntl Group	YW60	Not Applicable	AIM-7F-7, 8, 9
OA-8878C/D	Flt Cntl Group	YW61	Not Applicable	AIM-7F-9, 10
OA-8878D/D	Flt Cntl Group	YW62	Not Applicable	AIM-7F-11 (POP)
OA-8877/D	Tgt Skr-Radome	YW63	Not Applicable	AIM-7F-5
OA-8877A/D	Tgt Skr-Radome	YW64	Not Applicable	AIM-7F-6,7
OA-8877B/D	Tgt Skr-Radome	YW65	Not Applicable	AIM-7F-8
OA-8877C/D	Tgt Skr-Radome	YW66	Not Applicable	AIM-7F-9
OA-8877D/D	Tgt Skr-Radome	YW67	Not Applicable	AIM-7F-11 (POP)
WCU-5/B, 5A/B, 5B/B	Cntl Sect	PH61	Not Applicable	AIM/RIM-7M
CW-1178B/D,				
WGU-6A/B, 6B/B	Guid-Radome Assy	YW29	Not Applicable	AIM/RIM-7M
AN/DPN-72A	G & C Sect	PM17, PM18	Not Applicable	AIM-7E-2
AN/DPN-72A	G & C Sect	PM33	Not Applicable	RIM-7H-5
AN/SPN-72A	G & C Sect	PM26, PM27, PM30, PM31, PM32	Not Applicable	AIM-7E-3 & 4, RIM-7E-5
Bermite	Gas Press Gen (GPU)	399MR008P001*	RCM	AN/DPN-72A

***NOTE: Bermite manufactured lots 1 through 91.**

Holex	Gas Press Gen(GPU)	399MR008P001*	15 yrs.	" " "
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***NOTE: Holex manufactured lots 3466-1 and 3466-2.**

EPU	Elec Power Unit	321MR026P002	-----	" " "
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SPARROW AIM/RIM-7 (Cont'd)

TYPE OR MARK/MOD	NOMENCLATURE	DODIC/NALC OR PART NO.	SERVICE LIFE	USED ON
Fuel Stk	Lots PA-E-34263 Thru PA-E-53602	2066-2087	30 yrs.* RCM**	EPU
" "	Lots PA-E-53603 Thru 78L000E214*	2066-2087	30 yrs.* RCM**	"

***NOTE: PA-E lot numbers beginning with zero are within the range of lots PA-E-53603 through 78L000E214.**

" "	Lots 78L000E215 & Up	2066-2087	RCM	"
MK 266 MOD 0	EPU IGN Lot 43AAB (Holex)	399MR025P001	16 yrs.#	
MK 266 MOD 0	EPU IGN	399MR025P001	19 yrs.* RCM**	"

* NOTE: This is a one time emergency service life extension for SEA SPARROW application only.

** Air SPARROW application

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#NOTE: Missiles undergoing routine maintenance should be checked for EPU Igniters manufactured by Holex under Lot 43AAB. When found, replace EPU Igniter in accordance with NAVAIR 01-265GMAD-9.

HPU-M	Hydraulic Pwr Unit	402519	RCM	AN/DPN-72A
Gas Tank (Press)		2063-1899	RCM	HPU-M
Rubber Bladder		381MR156P001	RCM	"
Expl Actuator	Conax	399MR026P001	RCM	"
" "	Holex	399MR026P001	RCM	"
MK 38 MOD 0	Rkt Mtr	V335	RCM	AIM-7F
MK 38 MOD 1	Rkt Mtr	V343	RCM	AIM-7F
MK 38 MOD 2	Rkt Mtr	V218	RCM	AIM-7E-2, 3, 4, 6 RIM-7E-5 RIM-7H-5
MK 38 MOD 3	Rkt Mtr	V214	RCM	" "
MK 38 MOD 4	Rkt Mtr	V227	RCM	" "
MK 265 MOD 0	Igntr	2516361, LD617730	RCM	MK 38 MODS
MK 48 MOD 0	Rkt Mtr Inert	V181	Not Applicable	AIM-7E
MK 52 MOD 0	Rkt Mtr	V225	RCM	AIM-7E (BPDSMS Only)

SPARROW AIM/RIM-7 (Cont'd)

TYPE OR MARK/MOD	NOMENCLATURE	DODIC/NALC OR PART NO.	SERVICE LIFE	USED ON
MK 52 MOD 1	Rkt Mtr	V219	RCM	AIM-7E
MK 52 MOD 2	Rkt Mtr	V357	RCM * **	AIM-7E-2, 3, 4, 6, RIM-7E-5, 7H-5
* Lot numbers AJT-1-xxx (only)				
** Lot numbers CMI-1-xxx have restricted use and service life of 9 years.				
MK 274 MOD 0	Igntr	2624255, LD625683	10 yrs.	MK 52 MOD 2
MK 274 MOD 1	Igntr	4901256	RCM *	" "
**				
* Lot numbers AJT-1-xxx (only)				
** Lot numbers CMI-1-xxx have restricted use and service life of 10 years.				
MK 102 MOD 2	Rkt Mtr Trng Inert	IW36	Not Applicable	RIM-7M
MK 11 MOD 0	Whd Inert	V386	Not Applicable	AIM-7D, E
MK 18 MOD 0	Whd Inert	V389	Not Applicable	AIM-7D, E, E-2
MK 38 MOD 0	Whd	V376, V432, V435, V436	RCM	AIM-7D, 7E, 7E-2, 3, 4, 6 RIM-7E-5, 7H-5
MK 38 MOD 1	Whd	V536, V539	RCM	AIM-7E-2, 3, 4
MK 38 MOD 2	Whd	V537, V538	RCM	AIM-7E-2, 3
MK 73 MOD 1	Frng SW	PW28	RCM	MK 38 MOD 0
MK 73 MOD 2	Frng SW	PW29	RCM	" "
MK 5 MOD 2	SA Dev	1886143	14 yrs.	MK 38 MOD 0, 1
MK 35 MOD 0	SA Dev	NW56, V246	23 yrs.	" "
MK 38 MOD 0	Bstr Fz	NW57	17 yrs.	" "
MK 38 MOD 1	Bstr Fz	NW58	RCM	AIM-7C, 7D, 7E
AN/DSQ-35A	G&C Sect	PM38, PM45	Not Applicable	AIM-7F AIM/ATM-7F-6 Series
AN/DSQ-35B	G&C Sect	PM39	Not Applicable	" "
AN/DSQ-35C	G&C Sect	PM40, PM44	Not Applicable	" "
AN/DSQ-35D	G&C Sect	PM42, PM43	Not Applicable	" "
AN/DSQ-35E	G&C Sect	PM46, PM47	Not Applicable	" "
AN/DSQ-35F	G&C Sect	PM48, PM49	Not Applicable	" "
AN/DSQ-35G	G&C Sect	PM50, PM51	Not Applicable	AIM-7F-10
AN/DSQ-35H	G&C Sect (POP)	PM52, PM53	Not Applicable	AIM-7F-11
WGU-5A/B, B/B, C/B, D/B, E/B	G&C Sect	PL26	Not Applicable	AIM-7M

SPARROW AIM/RIM-7 (Cont'd)

TYPE OR MARK/MOD	NOMENCLATURE	DODIC/NALC OR PART NO.	SERVICE LIFE	USED ON
WGU-5A/B, B/B, C/B, D/B, E/B, F/B	G&C Sect	PL27	Not Applicable	AIM/RIM-7M
Bermite	Gas Press Gen (GPU)	S399MR008P002	RCM	AN/DSQ-35 Series
Battery	Battery Wet Primary	254955	RCM	" "
HPU-M	Hydraulic Pwr Unit		RCM	" "
Gas Tank (Press)	-----		RCM	HPU-M
Rubber Bladder	-----		RCM	" "
Expl Actuator	Conax	917AS223	RCM	" "
" "	Holex	917AS223	RCM	" "
MK 58 MOD 0, 1	Rkt Mtr	V522	RCM	AIM/ATM-7F Series
MK 58 MOD 2	Rkt Mtr	V381	RCM	AIM-7F-5
MK 58 MOD 3	Rkt Mtr	V378	RCM	AIM/AIM-7F/M/P
MK 58 MOD 4	Rkt Mtr	V523	RCM	RIM-7M/VL/P/R
MK 58 MOD 5	Rkt Mtr	V378	RCM	AIM/ATM-7F/M/P/R
Ignition Assy	-----	1131AS202	RCM	MK 58 MOD 5
LR44-RM-2	Rkt Eng Inert	LR44RM2	Not Applicable	AIM-7C, D, E Trainer
Igntr	Igntr	2824888	RCM	MK 58 MODS
Igntr	Igntr	4904228	RCM	" "
Igntr	Igntr	1131AS114	RCM	" "
WAU-10A/B	Whd Sect	V498	Not Applicable	AIM-7F/M/P
WAU-10/B	Whd Sect	V404	Not Applicable	AIM-7F/M/P
MK 71 MOD 0	Whd	-----	RCM	AIM-7F-5
WAU-17/B	Whd Sect	V548	Not Applicable	AIM/RIM-7M/P
WAU-17A/B	Whd Sect	V548	Not Applicable	AIM/RIM-7M/P/R
WAU-17(D-4)/B	Dummy Whd Sect	1W74	Not Applicable	Inert Operational Missile
MK 38 MOD 2	Fz Bstr	V621	RCM	WAU-17/B
WDU-27B	Whd	1375AS110	RCM	WAU-17/B
MK 33 MOD 0	S&A Dev	HW52	RCM	WAU-10/B, WAU-17/B
MK 22 MOD 0	Flare, GM	L489	RCM	AIM-7D, E
-----	Accum & Flow Value Assy	295577	RCM	AIM-7F
WCU-5C/B	Contl Sect	PH61	Not Applicable	AIM/RIM-7M/PI
WCU-5D/B	Contl Sect	PH61	Not Applicable	AIM/RIM-7M/PI/R
WCU-15A/B	Contl Sect	PT52	Not Applicable	AIM/VL/RIM-7M/PII
WGU-6B/B	Guid Sect	PT65	Not Applicable	AIM/RIM-7M
WGU-6C/B	Guid Sect	PT87	Not Applicable	AIM/RIM-7M
WGU-6D/B	Guid Sect	PG51	Not Applicable	AIM/RIM-7PI
WGU-23A/B	Guid Sect	PT90	Not Applicable	AIM/VL/RIM-7M
WGU-23D/B	Guid Sect	TBD	Not Applicable	AIM/VL/RIM-7PII

SIDEWINDER AIM-9

TYPE OR MARK/MOD	NOMENCLATURE	DODIC/NALC OR PART NO.	SERVICE LIFE	USED ON
MK 18 MOD 3	G&C Grp	PM20	Not Applicable	AIM/ATM-9H
MK 18 MOD 4	G&C Grp	PM28, PM34	Not Applicable	AIM/ATM-9H
MK 32 MOD 0	G&C Grp Dummy	NW52	Not Applicable	GDU-1/A
WGU-4A/B	G&C Sect	PM55	Not Applicable	AIM/CATM/NATM-9M
WGU-4C/B	G&C Sect	PM66	Not Applicable	AIM/CATM/NATM-9M
WGU-4D/B	G&C Sect	PM67	Not Applicable	AIM/CATM/NATM-9M
WGU-4E/B	G&C Sect	PV69	Not Applicable	AIM/CATM/NATM-9M
AN/DSQ-29	G&C Sect	PL25	Not Applicable	AIM/CATM/NATM-9L
AN/DSQ-29-TL	G&C Sect Trng	MW91	Not Applicable	AIM-9L/GDU-6C
AN/DSQ-29-T2	G&C Trng	YW27	Not Applicable	AIM/NATM-9L
WGU-4A(T-2)/B	G&C Trng	1W11	Not Applicable	AIM-9M
MK 6 MOD 4	Gas Gen	639AS754	RCM*	MK 18 MODS DSQ-29 and WGU-4A/B

***NOTE: Talley manufactured items from lots TAC-77L-001-065 and TAC-1-62 are to be removed as detected during GCS rework and sent to NAVORDSTA Indian Head, Code 580.**

MK 6 MOD 2	Gas Gen (Amoco)	1569449	RCM*	MK 18 MODS
MK 6 MOD 2	Gas Gen (Indian Head)	1569449	RCM	" "

***NOTE: Lots AOB-6-160, AOB-6-190 and AOB-6-199 are to be removed as they appear for overhaul and reported in condition code J.**

MK 6 MODS 1, 2	Gas Gen (Bermite)	1517482	RCM	MK 18 MODS and DSQ-29
Therm Battery	-----	2602147	RCM	MK 18 MODS, DSQ-29, WGU-4A/B and WGU-4B/B
MK 36 MOD 2	Rkt Mtr	V321	RCM	AIM/ATM-9H
MK 36 MOD 5	Rkt Mtr	V338	RCM	" "
MK 36 MOD 6	Rkt Mtr	V363	RCM	" "
MK 36 MOD 7	Rkt Mtr	V384	RCM	AIM/ATM-9H, AIM/NATM-9L, M
MK 36 MOD 8	Rkt Mtr	V380	RCM	AIM/ATM-9L, M
MK 36 MOD 9	Rkt Mtr	V884	RCM	AIM-9M/NATM-9M
MK 36 MOD 10	Rkt Mtr	V887	RCM	AIM/NATM-9L, M
MK 36 MOD 11	Rkt Mtr	V888	RCM	AIM/ATM-9L, M

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SIDEWINDER AIM-9 (Cont'd)

TYPE OR MARK/MOD	NOMENCLATURE	DODIC/NALC OR PART NO.	SERVICE LIFE	USED ON
MK 57 MOD 1	Rkt Mtr Dummy	V266	Not Applicable	ATM-9L, GDU-6C
MK 57 MOD 2	Rkt Mtr Dummy	V454	Not Applicable	AIM-9L, M
MK 57 MOD 3	Rkt Mtr Inert	V468	Not Applicable	ATM-9L, M, GDU-6C
MK 264 MOD 1	Igntr	V256	RCM	MK 36 MODS 2, 5, 6, 7
MK 297 MOD 0	Igntr	1204AS201	RCM	MK 36 MODS 8, 10
MK 297 MOD 1	Igntr	639AS4612	RCM	MK 36 MODS 9, 11
MK 48 MOD 0	Whd	V332	RCM	AIM-9H
MK 48 MOD 2	Whd	V365	RCM	" "
MK 48 MOD 4	Whd	V364	RCM	" "
MK 70 MOD 1	Whd Dummy	V036	Not Applicable	CATM-9L, GDU-6C, NATM-9L
WDU-17/B	Whd	V535	RCM	AIM-9L, AIM-9M
WDU-9/B	Whd Exer	V075	RCM	ATM-9D, G, H
WDU-9A/B	Whd Exer	YW58	RCM	NATM-9L, M
MK 13 MOD 0	S&A Device	V263	23 yrs.*	AIM/ATM-9L, M
MK 13 MOD 1	S&A Device	V265	23 yrs.*	" "
				AIM/ATM-9H
*NOTE: Units produced in 1961 and 1962 remain at 17 years and are to be condemned (Code H) when expired.				
MK 13 MOD 2	S&A Device	V259	RCM	AIM/NATM-9L, M
DSU-15/B	Tgt Det Dev	HW53	RCM	AIM-9L, M NATM-9L, M CATM-9L, M
DSU-15(T-1)B	Tgt Det Dev Trng	HW99	Not Applicable	CATM-9L, GDU-6C
Therm Battery	-----	639AS895	RCM	DSU-15/B, DSU-15B/B and DSU-15A/B
DSU-15A/B	Tdt Det Dev	YW20	RCM	AIM/CATM/NATM-9L, M
DSU-15(T-1)A/B	Tgt Det Dev Trng	2W41	Not Applicable	CATM-9L, M, GDU-6C
DSU-15B/B	Tgt Det Dev	V569	RCM	NATM-9L, CATM
-----	Init	2824895	RCM	MK 58 MOD 2

AMRAAM AIM-120

TYPE OR MARK/MOD	NOMENCLATURE	DODIC/NALC OR PART NO.	SERVICE LIFE	USED ON
None Assigned	Wing Assy	PG64	Not Applicable	AIM-120A,B; CATM-120A,B; JAIM-120A,B
None Assigned	Wing Assy	PT44	Not Applicable	AIM-120C, CATM-120C, JAIM-120C
None Assigned	Fin Assy	PG61	Not Applicable	AIM-120A,B; CATM-120A,B; JAIM-120A,B
None Assigned	Fin Assy	PT45	Not Applicable	AIM-120C, JAIM-120C
None Assigned	Fin Assy	BWDC	Not Applicable	AIM-120A,B
None Assigned	Fin Assy	BWFC	Not Applicable	CAIM-120C
None Assigned	Wing and Fin Set (4ea)	BWBK	Not Applicable	CAIM-120A,B
None Assigned	Wing and Fin Set (4ea)	BWEP	Not Applicable	AIM-120C
None Assigned	Buffer Connector	BWFB	Not Applicable	AIM-120A,B,C; CATM-120A,B,C; JAIM-120A,B,C
WDU-33B	Warhead	V598	10 yrs.	AIM-120A/B/C
WDU-33B	Warhead	V599	10 yrs.	AIM-120A/B/C

PHOENIX AIM-54

TYPE OR MARK/MOD	NOMENCLATURE	DODIC/NALC OR PART NO.	SERVICE LIFE	USED ON
AN/DSQ-26, AN/DSQ-26A, AN/DSQ-26B	Guid Sect	PF54, PF80 PF81, PF82 PF83, PF84 PF85, PF86 PF87, PF88 PF89, PF90 PF91, PF92 PF93, PF94 PF95	Not Applicable	AIM-54A
MK 13 MOD 0	Fz Trig Dev	67A84D301	RCM	AN/DSQ-26, AN/DSQ-26A, AN/DSQ-26B
WGU-11A/B	Guid Sect	PH34, PH35, PH36, PH37, PH38, PH39, PH40, PH41, PH42, PH43, PH44, PH45, PH46, PH47, PH48, PH49, PH50	Not Applicable	AIM-54C
WGU-11C/B	Guid Sect	PT02, PT03, PT04, PT06, PT07, PT08, PT09, PT11, PT13, PT14, PT15, PT16, PT17, PT18	Not Applicable	AIM-54C
WGU-11D/B	Guid Sect	PH84, PH85, PH86, PH87, PH88, PH89, PH90, PH91, PH92, PH93, PH94, PH95, PH96, PH97, PH98, PH99, PT01	Not Applicable	AIM-54C
WGU-17A/B	Guid Sect	PT70, PT71, PT72, PT73, PT74, PT75, PT76, PT77, PT78, PT79, PT80, PT81, PT82, PT83, PT84, PT86, PT87	Not Applicable	AIM-54C Sealed
WGU-17/B	Guid Sect	PT20, PT21, PT22, PT23, PT24, PT25, PT26, PT27, PT28, PT29, PT30, PT31, PT32, PT33, PT34, PT35	Not Applicable	AIM-54C Sealed

PHOENIX AIM-54 (Cont'd)

TYPE OR MARK/MOD	NOMENCLATURE	DODIC/NALC OR PART NO.	SERVICE LIFE	USED ON
WGU-17B/B	Guid Sect	PG79, PG80, PG81, PG82, PG83, PG84, PG85, PG86, PG87, PG88, PG89, PG90, PG91, PG92, PG93, PG94, PG95, PG96	Not Applicable	AIM-54C Sealed
DCU-190/B, DCU-190A/B, DCU-190B/B	Cntl Sect	PF55	Not Applicable	AIM-54A
WCU-7/B	Cntl Sect	PH59	Not Applicable	AIM-54C
WCU-7B/B	Cntl Sect	PG60	Not Applicable	AIM-54C
WCU-12/B	Cntl Sect	PG13	Not Applicable	AIM-54C Sealed
BA-586/D	Battery	499421-102	RCM	DCU-190/B, DCU-190A/B, DCU-190B/B
MK 47 MOD 0	Prop Sect Inert	PF77	Not Applicable	AIM-54
MXU-637A/B	Prop Sect	V885	RCM	AIM-54C
MXU-637/B	Prop Sect	V877	RCM	AIM-54A, C
MK 47 MOD 0	Rkt Mtr	499311-102-1, -3	RCM	MXU-637/B
MK 268 MOD 0	Igntr Assy	803174	RCM	MK 47 MOD 0
MK 60 MOD 0	Rkt Mtr	499311-102-2	RCM	MXU-637/B
ISM	Igntr w/ISM Assy	1150205	RCM	MK 60 MOD 0
MK 19 MOD 0	Fz Arm Actuator		RCM	MXU-637/B
FZU-27A/B	Arm Sect	ZW87	RCM	AIM-54A
FZU-42/B	Arm Sect	UW97	RCM	AIM-54A
FZU-42A/B	Arm Sect	JW88	RCM	AIM-54A
FZU-42B/B	Arm Sect	MW96	RCM	AIM-54A
	Arm Sect Inert	EW50	Not Applicable	AIM-54A
WAU-16A/B	Arm Sect	YW78	Not Applicable	AIM-54C
MK 82 MOD 0	Whd Inert	V393	Not Applicable	ATM-54, AEM-54
MK 82 MOD 0	Whd	V500	RCM	FZU-27/B, FZU-27A/B, FZU-27B/B, FZU-42/B, FZU-42A/B, FZU-42B/B
MK 82 MOD 0	Whd Inert	V393	Not Applicable	ATM-54, AEM-54
WAU-19/B	Arm Sect	V576	RCM	AIM-54C Sealed, C

PHOENIX AIM-54 (Cont'd)

TYPE OR MARK/MOD	NOMENCLATURE	DODIC/NALC OR PART NO.	SERVICE LIFE	USED ON
WAU-20/B	Arm Sect	V577	Not Applicable	AIM-54C
WAU-21/B	Arm Sect	V578	Not Applicable	AIM-54C Sealed, C
WDU-29/B	Whd	1468AS100	RCM	AIM-54C
WDU-29(D-1)/B	Whd Dummy	1468AS102	Not Applicable	AIM-54C
WDU-29(D-4)/B	Whd Dummy	1468AS109	Not Applicable	AIM-54C
MK 334 MOD 0	Fz	67A84E168	RCM	FZU-27B, FZU-27A/B, FZU-27B/B, FZU-42/B, FZU-42A/B, FZU-42B/B
MK 60 MODS	Fz Bstr	67A84D359 1137AS116 1137AS2150 1137AS2190	RCM	FZU-27/B, FZU-27A/B, FZU-27B/B, FZU-42/B, FZU-42A/B, FZU-42B/B
MK 22 MODS	Expl Lead Assy	67A84D401	RCM	FZU-27/B, FZU-27A/B, FZU-27B/B, FZU-42B/B FZU-42A/B
MK 38 MODS	TDD	-----	RCM	FZU-27/B, FZU-27A/B, FZU-27B/B, FZU-42/B, FZU-42A/B, FZU-42B/B
DSU-28A/B, 28/B	TDD	V551	RCM	AIM-54C
DSU-28B/B, 28C/B, 28D/B	TDD	V563	RCM	AIM-54C
MK 11 MODS	Elec Assy	2408111, 751AS100, 751AS500, 751AS510	RCM	FZU-27/B, FZU-27A/B, FZU-27B/B, FZU-42/B, FZU-42A/B, FZU-42B/B
MK 42 MODS	Fz Ant	2409200	RCM	FZU-27/B, FZU-27A/B, FZU-27B/B, FZU-42/B, FZU-42A/B, FZU-42B/B
FSU-10/A	SAD	V751, V753	RCM	AIM-54C
FSU-10/A	SAD Inert	V752	Not Applicable	AIM-54C

WALLEYE

TYPE OR MARK/MOD	NOMENCLATURE	DODIC/NALC OR PART NO.	SERVICE LIFE	USED ON
MK 27 MOD 0	Guid Sect	E224	Not Applicable	MK 1 MOD 0, 2 MK 2 MOD 0 MK 4 MOD 0, 1, 2, 6
MK 27 MOD 2	Guid Sect	E060	Not Applicable	MK 1 MOD 0, 2 MK 4 MOD 0, 1, 2, 6 MK 2 MOD 0 MK 13 MOD 3
MK 39 MOD 1A	Guid Sect	E226	Not Applicable	MK 1 MOD 6, 7
MK 39 MOD 2	Guid Sect	E227	Not Applicable	MK 1 MOD 6, 7
MK 39 MOD 2A	Guid Sect	E245	Not Applicable	MK 5 MOD 6 MK 1 MOD 8, 9 MK 4 MOD 3, 4, 7
MK 46 MOD 0	Guid Sect	E121	Not Applicable	MK 21 MOD 0, 1, 2, 3, 4, 5 MK 23 MOD 0, 1, 2 MK 27 MOD 3, 4, 5
MK 46 MOD 1	Guid Sect	E122	Not Applicable	MK 21 MOD 6, 7, 8, 9, 10, 11 MK 23 MOD 3, 4, 5 MK 27 MOD 3, 4, 5
MK 47 MOD 0	Guid Sect	E061	Not Applicable	MK 13 MOD 2, 3
MK 53 MOD 0	Guid Sect	874AS100	Not Applicable	MK 22 MOD 0, 1, 2, 3, 4, 5
MK 64 MOD 0	Guid Sect	E063	Not Applicable	MK 29 MOD 0, 1, 2, 3, 4, 5, 12, 13, 14, 15 MK 30 MOD 0, 1, 2, 6, 7
MK 64 MOD 1	Guid Sect	E064	Not Applicable	MK 29 MOD 6, 7, 8, 9, 10, 11, 16, 17, 18, 19 MK 30 MOD 3, 4, 5, 8, 9
MK 65 MOD 0	Guid Sect	E065	Not Applicable	MK 29 MODS
MK 65 MOD 1	Guid Sect	E066	Not Applicable	MK 29 MODS
MK 71 MOD 0, 1, 2	Guid Sect	E052	Not Applicable	MK 34, 38, All MODS
MK 75 MOD 0	Guid Sect	E053	Not Applicable	MK 35 MODS

WALLEYE (Cont'd)

TYPE OR MARK/MOD	NOMENCLATURE	DODIC/NALC OR PART NO.	SERVICE LIFE	USED ON
MK 4 MOD 0	Cntl Sect	E209	Not Applicable	MK 1 MOD 0, 2, 8, 9 MK 2 MOD 0
MK 4 MOD 2	Cntl Sect	E217	Not Applicable	MK 1 MOD 0, 2, 8, 9
MK 6 MOD 0	Cntl Sect Prac	E210	Not Applicable	MK 4 MOD 0, 2, 6, 7
MK 6 MOD 1	Cntl Sect Prac	E208	Not Applicable	MK 4 MOD 1, 4
MK 10 MOD 0	Cntl Sect	E247	Not Applicable	MK 5 MOD 6
MK 140 MOD 0	Cntl Sect	E070	Not Applicable	MK 13 MOD 2, 3
MK 159 MOD 0	Cntl Sect	E127	Not Applicable	MK 21 MOD 0, 1, 6, 7 MK 23 MOD 0, 3
MK 159 MOD 1	Cntl Sect	E128	Not Applicable	MK 21 MOD 2, 3, 8, 9 MK 23 MOD 1, 4
MK 159 MOD 2	Cntl Sect	E129	Not Applicable	MK 21 MOD 4, 5, 10, 11 MK 23 MOD 2, 5
MK 165 MOD 0	Cntl Sect	381AS1050-1	Not Applicable	MK 22 MOD 0, 1
MK 165 MOD 1	Cntl Sect	381AS1050-2	Not Applicable	MK 22 MOD 2, 3
MK 165 MOD 2	Cntl Sect	381AS1050-3	Not Applicable	MK 22 MOD 4, 5
MK 170 MOD 0	Cntl Sect Prac	E071	Not Applicable	MK 27 MOD 3 MK 38 MOD 0
MK 170 MOD 1	Cntl Sect Prac	E032	Not Applicable	MK 27 MOD 4 MK 38 MOD 1
MK 170 MOD 2	Cntl Sect Prac	E033	Not Applicable	MK 27 MOD 5 MK 38 MOD 2
MK 187 MOD 0	Cntl Sect	E072, E131	Not Applicable	MK 29 MOD 0, 1, 6, 7 MK 30 MOD 0, 3 MK 34 MOD 0, 1 MK 37 MOD 0
MK 187 MOD 1	Cntl Sect	E132	Not Applicable	MK 29 MOD 2, 3, 8, 9 MK 30 MOD 1, 4 MK 34 MOD 2, 3 MK 37 MOD 1
MK 187 MOD 2	Cntl Sect	E133	Not Applicable	MK 29 MOD 4, 5, 10, 11 MK 30 MOD 2, 5 MK 34 MOD 4, 5 MK 37 MOD 2

WALLEYE (Cont'd)

TYPE OR MARK/MOD	NOMENCLATURE	DODIC/NALC OR PART NO.	SERVICE LIFE	USED ON
MK 187 MOD 3	Cntl Sect	E072	Not Applicable	MK 29 MOD 12, 13, 16, 17 MK 30 MOD 6, 8 MK 34 MOD 6, 7 MK 37 MOD 3
MK 187 MOD 4	Cntl Sect	E073	Not Applicable	MK 29 MOD 14, 15, 18, 19 MK 30 MOD 7, 9 MK 34 MOD 8, 9 MK 37 MOD 4
MK 228 MOD 0	Cntl Sect	EA07	Not Applicable	MK 39 MOD 0
MK 228 MOD 1	Cntl Sect	EA08	Not Applicable	MK 39 MOD 1
MK 228 MOD 2	Cntl Sect	EA09	Not Applicable	MK 39 MOD 2
MK 1 MOD 0	Whd Sect	E213	Not Applicable	MK 1 MOD 0, 9
MK 1 MOD 2	Whd Sect	E214	Not Applicable	MK 1 MOD 2, 8
MK 1 MOD 3	Whd Sect	E084	Not Applicable	MK 1 MOD 0, 9
MK 1 MOD 4	Whd Sect	E085	Not Applicable	MK 1 MOD 2, 8
MK 2 MOD 0	Whd Sect Prac	E243	Not Applicable	MK 2 MOD 0
MK 2 MOD 2	Whd Sect Prac	E244	Not Applicable	MK 2 MOD 2, 3, 6
MK 4 MOD 0	Whd Sect Prac	E211	Not Applicable	MK 4 MOD 0, 1, 3, 4
MK 4 MOD 1	Whd Sect Prac	149AS143	Not Applicable	MK 4 MOD 2, 6
MK 7 MOD 6	Whd	E025	Not Applicable	MK 5 MOD 6
MK 7 MOD 7	Whd	E081	Not Applicable	MK 23 MOD 0, 1, 2, 3, 4, 5 MK 30 MOD 0, 1, 2, 3, 4, 5, 6, 7, 8, 9
MK 7 MOD 8	Whd	E088	Not Applicable	MK 5 MOD 6
MK 7 MOD 9	Whd	E089	Not Applicable	MK 23 MOD 0, 1, 2, 3, 4, 5 MK 30 MOD 0, 1, 2, 3, 4, 5, 6, 7, 8, 9
MK 9 MOD 1	Whd Sect Prac	E034	Not Applicable	MK 37 MOD 0, 1, 2, 3, 4 MK 27 MOD 3, 4, 5 MK 38 MOD 0, 1, 2
MK 58 MOD 0	Whd	2116999	RCM	MK 1 MOD 0
MK 58 MOD 2	Whd	2300362	RCM	MK 1 MOD 2

WALLEYE (Cont'd)

TYPE OR MARK/MOD	NOMENCLATURE	DODIC/NALC OR PART NO.	SERVICE LIFE	USED ON
MK 98 MOD 0	Whd Sect	E082	Not Applicable	MK 21 MOD 0, 2, 4, 6, 8, 10 MK 22 MOD 0, 2, 4 MK 29 MOD 0, 2, 3, 6, 8, 10, 12, 14, 16, 18 MK 21 MOD 1, 3, 5, 7, 9, 11 MK 22 MOD 1, 3, 5 MK 29 MOD 1, 3, 5, 7, 9, 11, 13, 15, 17, 19 MK 21 MOD 0, 2, 4, 6, 8, 10 MK 22 MOD 0, 2, 4 MK 29 MOD 0, 2, 4, 6, 8, 10, 12, 14, 16, 18 MK 34 MOD 0, 2, 4, 6, 8 MK 21 MOD 1, 3, 5, 7, 9, 11 MK 22 MOD 1, 3, 5 MK 29 MOD 1, 3, 5, 7, 9, 11, 13, 15, 17, 19 MK 34 MOD 1, 3, 5, 7, 9, MK 1 MODS MK 2 MODS
MK 98 MOD 1	Whd Sect	E083	Not Applicable	" "
MK 98 MOD 2	Whd Sect	E086	Not Applicable	" "
MK 98 MOD 3	Whd Sect	E087	Not Applicable	" "
MK 328 MOD 0	Fz Mech	DL2204328	RCM	" "
MK 44 MOD 0	Fz Bstr	2049578	RCM	" "
MK 44 MOD 1	Fz Bstr	704AS2300	RCM	" "
MK 10 MOD 0	Fz Trigr Dev	-----	RCM	" "
MK 1 MOD 0	Press Probe	-----	RCM	" "
MK 1 MOD 1	Press Probe	-----	RCM	" "
MK 7 MOD 4, 5, 6, 7, 8, 9	Whd Sect	E249, E025, E080, E081, E088, E089	Not Applicable	MK 5 MOD 4, 6, 8, 9 MK 23 MODS MK 13 MOD 2, 3, MK 30 MODS

WALLEYE (Cont'd)

TYPE OR MARK/MOD	NOMENCLATURE	DODIC/NALC OR PART NO.	SERVICE LIFE	USED ON
MK 87 MOD 2	Whd	245AS211	RCM	MK 5 MOD 4
MK 87 MOD 3	Whd	DL245AS734	RCM	MK 5 MOD 6
FZU-12/B	Fz Trigr Dev	-----	RCM	" "
FZU-11/B	Press Probe	-----	RCM	MK 7 MODS
-----	RFI Filter	2300281	RCM	" "
MK 44 MOD 0	Fz Bstr	2049578	RCM	" "
MK 44 MOD 1	Fz Bstr	704AS2300	RCM	" "
FMU-94/B	Fz	DL366AS100	RCM	" "
FMU-125/B	Fz	SK366AS130	RCM	" "
-----	Wire Harn	245AS402	Not Applicable	" "
-----	Wire Harn	245AS929	Not Applicable	" "

HARPOON A/R/UGM-84

TYPE OR MAR/MOD	NOMENCLATURE	DODIC/NALC OR PART NO.	SERVICE LIFE	USED ON
AN/DSQ-28D	Guid Sect	PT95	Not Applicable	A/R/UGM-84A Series
AN/DSQ-44D	Guid Sect	1657AS0505-5	Not Applicable	A/R/UGM-84A Series
AN/DSQ-44F	Guid Sect	1657AS0505-7	Not Applicable	A/R/UGM-84A Series
AN/DSQ-44J	Guid Sect	1657AS0505-8	Not Applicable	A/R/UGM-84A Series
AN/DSQ-44K	Guid Sect	1657AS0505-9	Not Applicable	A/R/UGM-84A Series
WAU-3B(V)/B	Whd Sect	1657AS0517-1	Not Applicable	A/R/UGM-84A Series
WAU-3C(V)/B	Whd Sect	VA32	Not Applicable	A/R/UGM-84A Series
WAU-3F(V)/B	Whd Sect	VA31	Not Applicable	A/R/UGM-84A Series
WAU-3G(V)/B	Whd Sect	VA32	Not Applicable	A/R/UGM-84A Series
WAU-3(D-1)/B	Whd Sect Inert	1657AS0524-1	Not Applicable	CATM-84D-1
WDU-18/B	Whd	V540	Not Applicable	WAU-3 Series except for WAU-3(D-1)/B
WDU-18(D-1)/B	Whd Inert	V039	Not Applicable	WAU-3(D-1)/B
FMU-141/B	S-A/CF	3W10	RCM	WAU-3 Series
MK 44 MOD 1	Fuze Booster	V606	RCM	WAU-3 Series except for WAU-3(D-1)/B
FZU-47/B	Press Probe	3W13	RCM	WAU-3 Series except for WAU-3(D-1)/B
FZU-45A/B	Crush Sensor (RH)	1657AS0537-1,-2	RCM	WAU-3 Series except for WAU-3(D-1)/B
FZU-46A/B	Crush Sensor (LH)	1657AS0536-1,-2	RCM	WAU-3 Series except for WAU-3(D-1)/B
AN/DKT-65(V)1	Exer Sect	5W53	Not Applicable	A/R/UTM-84 Series
AN/DKT-65(V)2	Exer Sect	5W54	Not Applicable	A/R/UTM-84 Series
AN/DKT-65(V)3	Exer Sect	5W55	Not Applicable	A/R/UTM-84 Series
AN/DKT-65B(V)1	Exer Sect	5W53	Not Applicable	A/R/UTM-84 Series
AN/DKT-65B(V)2	Exer Sect	5W54	Not Applicable	A/R/UTM-84 Series
AN/DKT-65B(V)3	Exer Sect	5W55	Not Applicable	A/R/UTM-84 Series
AN/DKT-70(V)2	Exer Sect	BWDP	Not Applicable	A/R/UTM-84 Series
AN/DKT-70(V)3	Exer Sect	BWDQ	Not Applicable	A/R/UTM-84 Series
AN/DKT-70(V)4	Exer Sect	BWDR	Not Applicable	A/R/UTM-84 Series
AN/DKT-83(V)1	Exer Sect	BWFF	Not Applicable	A/R/UTM-84 Series
AN/DKT-83(V)2	Exer Sect	BWFG	Not Applicable	A/R/UTM-84 Series
AN/DKT-83(V)3	Exer Sect	BWFH	Not Applicable	A/R/UTM-84 Series
AN/DKT-83(V)4	Exer Sect	BWFI	Not Applicable	A/R/UTM-84 Series

HARPOON A/R/UGM-84 (Cont'd)

TYPE OR MARK/MOD	NOMENCLATURE	DODIC/NALC OR PART NO.	SERVICE LIFE	USED ON
AN/DKQ-2	FT Tray/ RFTS	1W09, 1W10, 9W74, 9W75	Not Applicable	AN/DKT-65/70/83 Series
None	Telemetry Assy	642AS0450-1, -2, -3 1765AS8400-1, -2, -3 642AS8200-1 (PCM)	Not Applicable Not Applicable Not Applicable	AN/DKT-65/70/83 Series AN/DKT-65/70/83 Series AN/DKT-65/70/83 Series
FMU-141/B	S-A/CF	3W10	RCM	AN/DKT-65/70/83 Series
MK 71 MOD 0	Fuze Booster (Inert)	704AS2350	RCM	AN/DKT-65/70/83 Series
FZU-47/B	Press Probe	3W13	RCM	AN/DKT-65/70/83 Series
FZU-45A/B	Crush Sensor (RH)	1657AS0537-1, -2	RCM	AN/DKT-65/70/83 Series
FZU-46A/B	Crush Sensor (LH)	1657AS0536-1, -2	RCM	AN/DKT-65/70/83 Series
A/B44G-1E	Sust Sect	BWEA	Not Applicable	A/R/UGM-84D Series and A/R/UTM-84D Series
A/B44G-1F	Sust Sect	BWEB	Not Applicable	A/R/UGM-84D Series and A/R/UTM-84D Series
A/B44G-1G	Sust Sect	BWEC	Not Applicable	A/R/UGM-84D Series and A/R/UTM-84D Series
A/B44G-1H	Sust Sect	BWEC	Not Applicable	A/R/UGM-84D Series and A/R/UTM-84D Series
A/B44G-1J	Sust Sect	BWEE	Not Applicable	A/R/UGM-84D Series and A/R/UTM-84D Series
BA-596/D	Battery, Wet, Primary	3W15	RCM	A/B44G-1 Series
J402-CA-400	Eng	JW89	RCM	A/B44G-1 Series
WCU-1/B	Cntl Sect	PT99	Not Applicable	A/R/UGM-84D Series and A/R/UTM-84D Series
MK 67 MOD 1	Bstr Sect CAP/CAN	JW96	RCM	RGM/RTM-84D-4/5 and UGM/UTM-84D-1
MK 68 MOD 0	Bstr Sect TARTAR	JW77	RCM	RGM-84D-2 and RTM-84D-2
MK 96 MOD 0/1	Rkt Mtr	3W11	RCM	MK 67 MOD 1 and MK 68 MOD 0
MK 289 MOD 0/1	Igntr/Arming Firing Device	3W18	RCM	MK 67 MOD 1 and MK 68 MOD 0
MK 7 MOD 1	Canister, SH RES	5W60	RCM	RGM-84D-4 and RTM-84D-4
None	Kit, Firing Can SH RES	BWEN	Not Applicable	MK 7 MOD 0 Can SH RES

HARPOON A/R/UGM-84 (Cont'd)

TYPE OR MARK/MOD	NOMENCLATURE	DODIC/NALC OR PART NO.	SERVICE LIFE	USED ON
MK 12 MOD 1	Canister, TH Wall	BWEL	RCM	RGM-84D-5 and RTM-84D-5
None	Kit, Firing Can TH Wall	BWEM	Not Applicable	MK 12 MOD 1 TWC
A/W-99-1A	Capsule	JW81, 3W05	RCM	UGM-84D-1 and UTM-84D-1
A/W-99-1B	Capsule	BWCD	RCM	UGM-84D-1 and UTM-84D-1
None	Kit, Airlaunch	3W97	Not Applicable	AGM-84D-1 and ATM-84D-1
None	Kit, TARTAR Launch	BWEK	Not Applicable	RGM-84D-2 and RTM-84D-2
None	Kit, CAP/CAN	BWEI	Not Applicable	BGM-84D-1 and BTM-84D-1

SLAM AGM-84E-1C / ATM-84E-1C / CATM-84E-1C

TYPE OR MARK/MOD	NOMENCLATURE	DODIC/NALC OR PART NO.	SERVICE LIFE	USED ON
AN/DSQ-51B	Guide Sect	1943AS0102-4	Not Applicable	AGM-84E-1C ATM-84E-1C, CATM-84E-1C
WAU-23/B	Whd Sect	1943AS5000-2	Not Applicable	AGM-84E-1C
WAU-23(T-2)/B	Whd Inert	1943AS5001-2	Not Applicable	CATM-84E-1C
FZU-46A/B	Crush Sensor (LH)	1657AS0536-2	RCM	WAU-23/B
FZU-45A/B	Crush Sensor (RH)	1657AS0537-2	RCM	WAU-23/B
MK 44 MOD 1	Fuze Booster	704AS2300	RCM	WAU-23/B
FMU-141/B	S-A/CF	1765AS5008-1	RCM	WAU-23/B
FZU-47/B	Pressure Probe	642AS5650-1, -2	RCM	WAU-23/B
MK 71 MOD 0	Inert Fz Booster	704AS2350	RCM	WAU-23(T-2)/B
WDU-18/B	Whd	642AS5100-2	RCM	WAU-23/B
WDU-18(T-2)/B	Inert Whd	642AS5140	RCM	WAU-23(T-2)/B
AN/DKT-70(V)1	Exer Sect	1943AS8000-1	Not Applicable	ATM-84E-1C
AN/DKT-70(V)5	Exer Sect	1943AS8000-5	Not Applicable	ATM-84E-1C
AN/DKT-70(V)6	Exer Sect	1943AS8000-6	Not Applicable	ATM-84E-1C
AN/DKT-83(V)1	Exer Sect (IES)	1943AS8075-1	Not Applicable	ATM-84E-1C
AN/DKT-83(V)2	Exer Sect (IES)	1943AS8075-2	Not Applicable	ATM-84E-1C
AN/DKT-83(V)3	Exer Sect (IES)	1943AS8075-3	Not Applicable	ATM-84E-1C
AN/DKT-83(V)4	Exer Sect (IES)	1943AS8075-4	Not Applicable	ATM-84E-1C
A/B44G-1K	Sust Sect	1943AS6000-1	Not Applicable	AGM-84E-1C ATM-84E-1C
A/B44G-1K(D-1)	Sust Sect	1943AS6000-2	Not Applicable	CATM-84E-1C
BA-596/D	Battery, Wet, Primary	642AS0755-1, -2, -3	RCM	A/B44G-1K A/B44G-1K(D-1)
J402-CA-400	Engine	719401-2	RCM	A/B44G-1K A/B44G-1K(D-1)
None	Telemetry Tray	1765AS8003-1	Not Applicable	AN/DKT-70/83 Series
AN/DKQ-2	Flight Termination Tray	642AS8950-5	Not Applicable	AN/DKT-70/83 Series
WCU-1/B	Control Sect	1657AS0520-1	Not Applicable	AGM-84E-1C ATM-84E-1C CATM-84E-1C

SLAM ER AGM-84H-1 / ATM-84H-1 / CATM-84H-1A

TYPE OR MARK/MOD	NOMENCLATURE	DODIC/NALC OR PART NO.	SERVICE LIFE	USED ON
AN/DSQ-61	Guide Sect	1943AS1102-5	Not Applicable	AGM-84H-1, ATM-84H-1, CATM-84H-1
AN/DSQ-61A	Guide Sect (Flex Cable)	1943AS1102-6	Not Applicable	AGM-84H-1, ATM-84H-1, CATM-84H-1A
TBD	Guide Sect (Round Cable)	1943AS1102-7	Not Applicable	AGM-84H-1, ATM-84H-1, CATM-84H-1A
WAU-30/B	Whd Sect (Round Cable)	1943AS5025-1	Not Applicable	AGM-84H-1
TBD	Whd Sect (Flex Cable)	1943AS5025-2	Not Applicable	AGM-84H-1
WAU-30(T-1)/B	Whd Sect Trng (Round Cable)	1943AS5026-1	Not Applicable	CATM-84H-1A
TBD	Whd Sect Trng (Flex Cable)	1943AS5026-2	Not Applicable	CATM-84H-1A
FZU-56/B	Pressure Probe, Live	1943AS5030-1	RCM	WAU-30/B
FZU-56(D-1)/B	Pressure Probe, Inert	1943AS0531-1	RCM	WAU-30(T-1)/B
WDU-40/B	Whd	1765AS5100-1	Not Applicable	WAU-30/B
WDU-40(D-1)/B	Whd Inert	1765AS5140-1	Not Applicable	WAU-30(T-1)/B
FMU-155/B	S-A/CF	1765AS5150-1	RCM	WAU-30/B
FMU-155(D-1)/B	S-A/CF Inert	1765AS5142-1	RCM	WAU-30(T-1)/B
BBU-60/B	Fz Booster	1765AS5180-1	RCM	WAU-30/B
MK 71 MOD 0	Fz Booster, Inert	704AS2350	RCM	WAU-30(T-1)/B
AN/DKT-81	Exer Sect	1943AS8025-1	Not Applicable	ATM-84H-1
A/B44G-5	Sust Sect	1943AS6025-1	Not Applicable	AGM-84H-1, ATM-84H-1
A/B44G-5(D-1)	Sust Sect, Inert	1943AS6051-1	Not Applicable	CATM-84H-1A
J402-CA-400	Engine	719401-2	RCM	A/B44G-5, A/B44G-5(D-1)
BA-596/B	Battery, Wet	642AS0755-1	RCM	A/B44G-5
None	Battery, Inert	1765AS6005-1	RCM	A/B44G-5(D-1)
WCU-24/B	Control Sect	1943AS1800-1	Not Applicable	AGM-84H-1, ATM-84H-1, CATM-84H-1A
AN/DKT-79	PCM Telemetry Tray	642AS8200	Not Applicable	AN/DKT-81
Not Assigned	RFTS Tray Assy	642AS2131-2,-4, -5	Not Applicable	AN/DKT-81

TOW BGM-71

TYPE OR MARK/MOD	NOMENCLATURE	DODIC/NALC OR PART NO.	SERVICE LIFE	USED ON
	GM	PB91	RCM	BGM-71A-1
	GM	PB92	RCM	BGM-71C
	GM	PV15	RCM	BTM-71C-1A
	GM Prac	PE63	RCM	BTM-71A-2A
	GM Dummy	JW74	RCM	BTM-71C
	GM	4W73	RCM	BGM-71A-1A
	GM tactical	PU16	RCM	BGM-71E-5B

HARM AGM-88A/B/C

TYPE OR MARK/MOD	NOMENCLATURE	DODIC/NALC OR PART NO.	SERVICE LIFE	USED ON
WGU-2/B	Guid Section	PH65, PT37	Not Applicable	AGM-88A, ATM-88A, CATM-88A
WGU-2C/B	Guid Section	PG74	Not Applicable	AGM-88C, ATM-88C CATM-88C
WGU-2B/B	Guid Section	PT39	Not Applicable	AGM-88B, CATM-88B
WGU-2(D-2)/A	Guid Section Dummy	HW06	Not Applicable	DATM-88A
BATTERY P-465	Battery Primary Type	FW03	RCM	WGU-2/B
WCU-2/B	Cntl Sect	PH64, PT50	Not Applicable	AGM-88A, AGM-88B, ATM-88A, ATM-88B CATM-88A, CATM-88B
WCU-2(D-2)/A	Cntl Sect Dummy	HW17	Not Applicable	DATM-88A
DSU-19/B	Detector, Target	704AS2602	RCM	WCU-2/B
WAU-7/B	Whd	V557	RCM	AGM-88A
WAU-7(T-1)/B or				
WAU-11/B	Whd Inert	9W67	Not Applicable	ATM-88A
WAU-11/B	Whd Inert	9W91	Not Applicable	CATM-88A
-----	Whd, Dummy	704AS4932-1	Not Applicable	CATM-88A
-----	Whd, Dummy	704AS4932-2	Not Applicable	DATM-88A
WAU-27/B	Whd Tact	704AS11355	RCM	AGM88B/C-1
WDU-21/B	Whd Tact	V566	RCM	AGM-88A
FMU-111(XCL-1)/B	Fz	V110	RCM	WAU-7/B
FMU-129/B	Fz, Inert Trng	704AS2360	Not Applicable	WAU-111/B
MK44 MOD 1	Booster, Fz	V606	RCM	FMU-111/B
MK71 MOD 0	Booster, Fz (Inert)		Not Applicable	FMU-129/B
RT-1198A	Telemetry Sect	704AS4950	Not Applicable	ATM-88A
YSR-113-TC-1	Rkt Mtr	V496	RCM	AGM-88A, ATM-88A
TSR-113-TC-1	Rkt Mtr, Inert	HW18, 3W08	Not Applicable	CATM-88A, DATM-88A
TSR-113-TC-2	Rkt Mtr, Inert	-----	Not Applicable	DATM-88A
-----	Ign/Safe and Arm Assembly	FW04	RCM	YSR-113-TC-1
-----	Ign Assembly Trng (Inert)	704AS4284	Not Applicable	TSR-113-TC-1, TRS-113-TC-2

MAVERICK AGM-65

TYPE OR MARK/MOD	NOMENCLATURE	DODIC/NALC OR PART NO.	SERVICE LIFE	USED ON
WGU-9/B	G&C Section	2W49	Not Applicable	AGM-65E
WGU-13/B	G&C Section	PY40	Not Applicable	CATM-65F
WBU-2/B	Center-Aft-Section	2W92	RCM	AGM-65E/F
WPU-8(T-2)/B	Center-Aft-Section (Training)	2W91	Not Applicable	TGM-65/E
-----	Hydraulic Actuation System	V034	Not Applicable	WBU-2/B

PENGUIN AGM-119B

TYPE OR MARK/MOD	NOMENCLATURE	DODIC/NALC OR PART NO.	SERVICE LIFE	USED ON
W/DU39B FMU-155B MK 44 MOD 1	Seeker Section	31494255	8 yrs	AGM-119B
	Navigation & Control Section	314942265	8 yrs	AGM-119B
	Warhead Section	31489404	8 yrs	AGM-119B
	Fuze	1822AS100	8 yrs	AGM-119B
	Booster	704AS2300	8 yrs	AGM-119B
	Motor Section	604550-000	8 yrs	AGM-119B
	Exercise Section	31493505	8 yrs	AGM-119B

SIDEARM AGM-122A

TYPE OR MARK/MOD	NOMENCLATURE	DODIC/NALC OR PART NO.	SERVICE LIFE	USED ON
WGU-15/B	G&C Sect	PL28	Not Applicable	AGM-122/A/ATM-122/A
DSU-31/B	Tgt Det Dev	V567	RCM	CATM-122/A
MK 70 MOD 1	Whd Dummy	V036	Not Applicable	AGM-122A/ATM-122/A
WDU-31/B	Whd	V497	RCM	AGM-122/A
MK 36 MOD 12	Rkt Mtr	VH02	RCM	AGM-122/A/ATM-122/A
DSU-15 (T-1)/B	Tgt Det Dev	HW99	Not Applicable	CATM-122/A
DSU-15 (T-1)A/B	Tgt Det Dev	2W41	Not Applicable	CATM-122/A
MK 57 MOD 1	Rkt Mtr Dummy	V266	Not Applicable	CATM-122/A
MK 57 MOD 2	Rkt Mtr Dummy	V454	Not Applicable	CATM-122/A
MK 57 MOD 3	Rkt Mtr Inert	V468	Not Applicable	CATM-122/A

2.75 INCH FFAR

TYPE OR MARK/MOD	NOMENCLATURE	DODIC/NALC OR PART NO.	SERVICE LIFE	USED ON
MK 66 MOD 2	Rkt Mtr	J147, HA03	RCM	NAVAIR 11-75A-92
MK 67 MOD 0	Whd	H861	RCM	"
MK 67 MOD 1	Whd	H893	RCM	"
M151	Whd	H842, H843, H864	RCM	"
M156	Whd	H855	RCM	"
WDU-4A/A	Whd	HY71	RCM	"
MK 352 MOD 2	Whd Fz	J344	RCM	"
FMU-90/B	Whd Fz	J289	RCM	"
M423	Whd Fz	J349	RCM	"
M427	Whd Fz	J346	RCM	"
M429	Whd Fz	-----	RCM	"
M257	Whd	H812,H813	RCM	"
M278	Whd	HA06	RCM	"
MK 66 MOD 4	Rkt Mtr	HA07	RCM	"

5-INCH ZUNI

TYPE OR MARK/MOD	NOMENCLATURE	DODIC/NALC OR PART NO.	SERVICE LIFE	USED ON
MK 71 MOD 0	Rkt Mtr	J270	RCM	NAVAIR 11-75A-92
MK 71 MOD 1	Rkt Mtr	J271	RCM	"
MK 34 MODS	Whd	H929, H943	RCM	"
MK 24 MOD 0	Whd	H930	RCM	"
MK 24 MOD 1	Whd	H939	RCM	"
MK 32 MOD 0	Whd	H931	RCM	"
MK 33 MOD 1	Whd	HW40	RCM	"
MK 63 MOD 0	Whd	H933	RCM	"
MK 84 MOD 4	Whd	HW96	RCM	"
MK 188 MOD 0	Whd Fz	J345	RCM	"
MK 93/M414A1	Whd Fz	J329	RCM	"
MK 352 MOD 2	Whd Fz	J344	RCM	"
FMU-90/B	Whd Fz	J289	RCM	"
RR-182/AL	Whd	HW96	RCM	"
BBU-15/B	Adapt Boost	HW42	RCM	"

JATO/RATO

TYPE OR MARK/MOD	NOMENCLATURE	DODIC/NALC OR PART NO.	SERVICE LIFE	USED ON
MK 6 MODS 1, 2	RM 15KS-1000 (Aerojet) (Produced before 1956)	H340	22 yrs. (Note 1)	C-130, KC-130, LC-130
MK 6 MODS 1, 2	RM 15KS-1000 (Aerojet) (1956 and subsequent production years)	H340	(Note 2)	C-130, KC-130, LC-130
MK 6 MODS 1, 2	RM 15KS-1000 (Bermite)	H340	(Note 2)	C-130, KC-130, LC-130
MK 6 MODS 1, 2	RM 15KS-1000 (Canadian Bristol)	H340	(Note 2)	C-130, KC-130, LC-130
MK 6 MODS 1, 2	RM 15KS-1000 (Indian Head)	H340	(Note 2)	C-130, KC-130, LC-130
MK 165 MOD 0	Igntr (Aerojet) (Produced before 1956)	H403	22 yrs. (Note 1)	MK 6 MODS 1, 2
MK 165 MOD 0	Igntr (Aerojet) (1956 and subsequent production years)	H403	RCM	MK 6 MODS 1, 2

NOTE: 1. These units are all overage and should no longer be in fleet use.

- 2. All MK 6 MODS 1, 2 JATO's which have been inspected and certified in accordance with AWB-292 are in Condition Code A per NAR 0133-95. Motors must be certified in accordance with AWB 292 prior to use. Certified motors are indicated on the motor exterior along with the certification date. All motors which have not been inspected and certified in accordance with AWB-292 are in Condition Code P per NAR 0134-95.**

JATO/RATO (Cont'd)

TYPE OR MARK/MOD	NOMENCLATURE	DODIC/NALC OR PART NO.	SERVICE LIFE	USED ON
MK 165 MOD 0	Igntr (Macon, Bermite)	H403	RCM	MK 6 MODS 1, 2
MK 165 MOD 1	Igntr	H403	RCM	MK 6 MODS 1, 2
MK 23 MOD 1	RM2.2KS-11,000	H350	12 yrs.	BQM-34 Target
MK 296 MOD 0	Igntr	H422	RCM	MK 23 MODS 2, 3
MK 117 MOD 0	RM 1.OES-2400	H341	RCM	BQM-74 Target
MK 125 MOD 1	RATO Rocket Motor	H311	RCM	Pioneer/UAV
MK 125 MOD 2	RATO Rocket Motor	HA19	RCM	Pioneer/UAV
MK 128 MOD 0, 1	JATO Rocket Motor	H313, H314	RCM	C-130, KC-130, LC-130
MK 309 MOD 0	Igntr	H388	RCM	MK 128 MODS 0, 1

PYROTECHNICS

TYPE OR MARK/MOD	NOMENCLATURE	DODIC/NALC OR PART NO.	SERVICE LIFE	USED ON
M112A1	Photoflash	L135, L136	RCM	Refer to NAVAIR 11-15-7
M123A1	Photoflash	L139, L140	RCM	"
MK 28 MODS	Tgt Flare	LW39	RCM	"
MK 58 MODS	Marine Marker	L580, L585	RCM	"
MK 25 MODS	Marine Marker	L554	RCM	"
MK 24 MODS	Parachute Flare	L407	RCM	"
MK 24/45	Flare	L416, L420	RCM	"
LUU 2B/B/MK 45	Flare	L423, L424 L426, L427, L441, L442, L473, L411	RCM	"
MK 89 MOD 0	Smoke Signal	L169	RCM	"
AN-M37	Signal	L225	RCM	"
AN-M38	Signal	L226	RCM	"
AN-M39	Signal	L227	RCM	"
MK 46 MODS	Decoy Flare	LW24, LW55, LW58, LW60	RCM	"
MK 50 MOD 0	Decoy Flare	LW53	RCM	"
MJU-8/B	Decoy Flare	LW62	RCM	"
MJU-2/B	Decoy Flare	LW61	RCM	"
MK 6 MODS	Signal	L525	RCM	"

UNDERWATER SOUND SIGNALS

TYPE OR MARK/MOD	NOMENCLATURE	DODIC/NALC OR PART NO.	SERVICE LIFE	USED ON
MK 57 MOD 0	SUS	SW07	RCM	Refer to NAVAIR 11-1-107
MK 59 MOD 1A	SUS	SW05	RCM	"
MK 59 MOD 5	SUS	SW19, SW22	RCM	"
MK 61 MOD 0	SUS	SW08	RCM	"
MK 64 MOD 0	SUS	SW09	RCM	"
MK 82 MOD 0	SUS	SW30	RCM	"
MK 82 MOD 1	SUS	SW37	RCM	"
MK 83 MOD 0	SUS	SW33	RCM	"
MK 84 MOD 0	SUS	SW06	10 yrs.	"
MK 84 MOD 1	SUS	SW39	10 yrs.	"
MK 94 MOD 0	SUS	SW44	RCM	"
MK 128 MOD 0	SUS	SW38	RCM	"
MK 4 MOD 0	Exp Section	S547	RCM	"
MK 4 MOD 2	Exp Section	S549	RCM	"
MK 8 MOD 0	Exp Section	S537	RCM	"

GUN AMMUNITION

TYPE OR MARK/MOD	NOMENCLATURE	DODIC/NALC OR PART NO.	SERVICE LIFE	USED ON
MK 101 MODS	20 mm HPT	A809	RCM	MK 11, 12 Gun
MK 103 MODS	20 mm Dummy	A807	RCM	"
MK 105 MOD 1	20 mm TP	A874	RCM	"
MK 106 MOD 2	20 mm HEI	A871	RCM	"
MK 107 MOD 1	20 mm API	A872	RCM	"
MK 108 MOD 1	20 mm APT	A873	RCM	"
MK 109	20 mm Circ Test	AW02	RCM	"
M51E1	20 mm Dummy	A924	RCM	M61 Gun
M54A1	20 mm HPT	A892	RCM	M61, M197
M55/M55A1/M55A2	20 mm TP	A926, A661, A891	RCM	"
M56	20 mm HEI	A890	RCM	M39, M61, M197
M220	20 mm TP-T	A651	RCM	M61, M39
M242	20 mm HEI-T	A659	RCM	M61, M197, M39
----	30 mm HEI (LH)	B112	RCM	30 mm ADEN Gun
----	30 mm HEI(RH)	B114	RCM	"
----	30 mm TP (LH)	B113	RCM	"
----	30 mm TP (RH)	B115	RCM	"
	30 mm TP (LH)	B119	RCM	30 mm, XM230
	30 mm TP (RH)	B120	RCM	"
	30 mm HEI (LH)	B124	RCM	M230
	30 mm HEI (RH)	B125	RCM	M230
PGU-20/U	25 mm API	A979	RCM	25 mm GAU-12
PGU-22/U	25 mm HEI	A980	RCM	"
PGU-23/U	25 mm Practice	A978	RCM	"
PGU-24/U	25 mm Dummy	A968	RCM	"

SMOKEY SAM

TYPE OR MARK/MOD	NOMENCLATURE	DODIC/NALC OR PART NO.	SERVICE LIFE	USED ON
GTR-18A PVU-3A/E	Rocket Motor Igniter	YW33 H427	Note (1) Note (1)	GTR-18A

- NOTE (1) (A) RCM service life for those rocket motors and igniters manufactured 1988 or latter. (LOT #IH88A001-35 and subsequent).**
- (B) Six year service life for those rocket motors and igniters manufactured before 1988.**

BOMBS AND COMPONENTS

TYPE OR MARK/MOD	NOMENCLATURE	DODIC/NALC OR PART NO.	SERVICE LIFE	USED ON
BLU-109A/B	HTP Bomb	F142	RCM	NAVAIR 11-5A-17
BLU-110A/B	GP Bomb	F288	RCM	"
BLU-110B/B	GP Bomb	EB28	RCM	this is AF Only
BLU-111A/B	GP Bomb	F289	RCM	NAVAIR 11-5A-17
BLU-116A/B	GP Bomb	TBD	RCM	"
BLU-117A/B	GP Bomb	EB04	RCM	"
MK 81 MODS	GP Bomb	E463, E465	RCM	"
MK 82 MODS	GP Bomb	E480, E481, E482, E483, E487, E488, E471, E485	RCM	"
		E489	RCM	"
MK 83 MODS	GP Bomb	E506, E507, E508, E509, E510, E513	RCM	"
MK 84 MODS	GP Bomb	F126, F127, F128, F272, F281, F282, F274, E516, E517, F262, F283	RCM	"
MK 77 MOD 4	Firebomb	E134	RCM	"
MK 77 MOD 5	Firebomb	E167	RCM	"
LGTR BDU-57/B	Guid Bomb Unit Trng Rd	BWBG	42 Mos	"
LGTR BDU-59/B	Guid Bomb Unit Trng Rd	BWGH	42 Mos	"
LGTR BDU-59A/B	Guid Bomb Unit Trng Rd	EB33	42 Mos	"
LGTR BDU-60B	Guid Bomb Unit Trng Rd	BWGI	42 Mos	"
LGTR BDU-60A/B	Guid Bomb Unit Trng Rd	EB34	42 Mos	"

NOTE: (*), See service life definition in paragraph "D3"

BOMBS AND COMPONENTS (Cont'd)

TYPE OR MARK/MOD	NOMENCLATURE	DODIC/NALC OR PART NO.	SERVICE LIFE	USED ON
WCU-10/B	Guid Bomb Unit BMB(GS)	EA15	RCM	NAVAIR 11-140-10
WCU-10A/B	Guid Bomb Unit BMB(GS)	EA16	RCM	"
MAU-169E/B	Guid Bomb Unit BMB (CCG)	G495	RCM	"
MAU-169F/B	Guid Bomb Unit BMB (CCG)	G496	RCM	"
WGU-39/B	Guid Bomb Unit BMB (GCU)	EY71	1 Yr / 20 Yrs	"
WGU-39A/B	Guid Bomb Unit BMB (GCU)	EA81	1 Yr / 20 Yrs	"
MAU-169A/B	Guid Bomb Unit (CCG)	FW92, EO67	RCM	NAVAIR 11-140-10
MAU-169D/B	Guid Bomb Unit (CCG)	E069	RCM	"
MAU-169H/B	Guid Bomb Unit (CCG)	EA65	RCM	"
MAU-169K/B	Guid Bomb Unit (CCG)	TBD	RCM	"
KMU-556/B	Guid Set	EA69	5 Yrs (*), Air Force/Navy	NAVAIR 11-5A-37
KMU-556/B(D-2)	Guid Set	BY51	RCM Air Force/Navy	NAVAIR 11-5A-37
KMU-557/B	Guid Set	EA70	5 Yrs (*), Air Force Only	NAVAIR 11-5A-37
KMU-558/B	Guid Set	EA76	5 Yrs (*), Navy Only	NAVAIR 11-5A-37
KMU-558/B(D-2)	Guid Set	BY50	RCM Navy Only	NAVAIR 11-5A-37
KMU-559/B	Guid Set	EA97	5 Yrs (*), Air Force/Navy	NAVAIR 11-5A-37

NOTE: (*), See service life definition in paragraph "D3"

BOMBS AND COMPONENTS (Cont'd)

TYPE OR MARK/MOD	NOMENCLATURE	DODIC/NALC OR PART NO.	SERVICE/SHELF LIFE	USED ON
M904E2	Fz	F680, F681	180 Days/35 Yrs.	NAVAIR 11-1F-2
M904E3	Fz	F830	180 Days/35 Yrs.	"
M904E4	Fz	F739	180 Days/35 Yrs.	"
MK 339 MOD 0	Fz	F732	RCM	"
MK 339 MOD 1	Fz	F740	RCM	"
MK 376 MOD 0	Fz	G104	180 Days/RCM	"
MK 13 MOD 0	Initiator	GW04	180 Days/RCM	"
M9	Fz Delay	G212, G213, G214, G215, G216, G217	RCM	"
M1A1	Fz Extension	G374, G376	RCM	"
MK 43 MOD 0	TDD	G382	RCM	"
M148/T45	Nose Adapter Bstr	F392, F380, F372	RCM	NAVAIR 11-5A-17
CXU-3A/B	CTG, Signal, Prac	F470	RCM	"
CXU-4A/B	CTG, Signal, Prac	F534	RCM	"
MK 4 MOD 3	CTG, Signal, Prac	F562	RCM	"
DSU-33(D-2)B/B	Proximity Sensor, Dummy	CWLL	RCM	"
DSU-33B/B	Proximity Sensor,	BWGF	5 Yrs / 10 Yrs	"
FMU-140/B	Proximity Fuze	F770	10 yrs / 10 Yrs.	"
FMU-140A/B	Proximity Fuze	EA39	10 yrs / 10 Yrs.	"
FMU-140(D-2)/B	Dummy Proximity Fuze	E921	RCM	"
FMU-140(D-2)A/B	Dummy Proximity Fuze	EA40	RCM	"
FMU-139/B	Fuze	F762	180 Days / 10 Yrs	"
FMU-139A/B	Fuze	F810	180 Days / 10 Yrs	"
FMU-139B/B	Fuze	EB05	180 Days / 10 Yrs	"
FMU-143E/B	Fuzing System	F849		
	(a) Fuze		365 Days / 10 Yrs	"
	(b) Initiator (FZU-32B/B)		10 Yrs	"
FMU-152/B	Bomb Fuze System	EA73	10 Yrs/20 Yrs	"
FMU-152 (D-2)/B	Dummy Bomb			
	Fuze System	TBD	RCM	"
MK 122 MOD 0	Arming Safety Switch	GW03	RCM	NAVAIR 11-5A-17

CLUSTER BOMB UNITS (ROCKEYE) CONFIGURATION

TYPE OR MARK/MOD	NOMENCLATURE	DODIC/NALC OR PART NO.	SERVICE LIFE	USED ON
MK 20 MOD 3	ROCKEYE	E173, E809, E835	RCM	Refer to NA 11-5A-35/ NA 11-140-9
MK 20 MOD 6	ROCKEYE	E798, E837, E838	RCM	Refer to "
MK 20 MOD 7	ROCKEYE	E794, E853	RCM	Refer to "
MK 20 MOD 9	ROCKEYE	E898	10 Yrs.*	Refer to "
MK 20 MOD 11	ROCKEYE	E892	RCM	Refer to "
MK 20 MOD 12	ROCKEYE	E895, E896	RCM	Refer to "
CBU-99/B	ROCKEYE	E916	RCM	Refer to "
CBU-99(D-1)/B	ROCKEYE	EA63	RCM	Refer to "
CBU-99A/B	ROCKEYE	E917	10 Yrs.*	Refer to "
CBU-99B/B	ROCKEYE	EA56	10 Yrs.*	Refer to "
CBU-99(T-1)/B	ROCKEYE	E912	RCM	Refer to "
CBU-99(T-1)/B/B	ROCKEYE	EA57	10 Yrs.*	Refer to "
CBU-99(D-1)/B/B	ROCKEYE	EA61	RCM	Refer to "
CBU-99(T-1)/A/B	ROCKEYE	E913	10 Yrs.*	Refer to "
CBU-100/B	ROCKEYE	E918	RCM	Refer to "
CBU-100A/B	ROCKEYE	E919	10 Yrs.*	Refer to "
CBU-100(T-1)/B	ROCKEYE	E914	RCM	Refer to "
CBU-100(T-1)B/B	ROCKEYE	EA59	10 Yrs.*	Refer to "
CBU-100(D-1)/B	ROCKEYE	EA60	RCM	Refer to "
CBU-100(D-1)B/B	ROCKEYE	EA62	RCM	Refer to "
CBU-100(T-1)A/B	ROCKEYE	E915	10 Yrs.*	Refer to "

NOTE:

*. Service life of weapon is based on the service life of the FMU-140 Fuze.

CBU-78 GATOR CONFIGURATIONS

TYPE OR MARK/MOD	NOMENCLATURE	DODIC/NALC OR PART NO.	SERVICE LIFE	USED ON
CBU-78/B	Gator	K295	15 Yrs.	Refer to NA 11-5A-34/ NA 11-140-9
CBU-78A/B	Gator	K301	10 Yrs.*	Refer to NA 11-5A-34/ NA 11-140-9
CBU-78B/B	Gator	K133	10 Yrs.**	Refer to NA 11-5A-34/ NA 11-140-9
CBU-78C/B	Gator	J004	10 Yrs.**	Refer to NA 11-5A-34/ NA 11-140-9

NOTE:

*. Service life of weapon is based on the service life of the FMU-140 Fuze.

**. Service life is based on MDD.

APPENDIX E

**Record of Applicable Change Recommendations
and
Interim Changes**

APPENDIX E

Record of Applicable Change Recommendation
and Interim Changes

Change Proposal Number	Change Recommendation	Incorporated In 8000.16			
		I	II	III	IV
2B95-09	Support Equipment Maintenance Reporting Data		X		
2B95-10	Configurations and Data Management Support System				X
2B95-11	AOOCP Information Update	X			
2B95-12	HAZMAT Information Update	X	X	X	X
2B96-02	WALLEYE MDD Change Approval/Disapproval at Field Level		X		
2B96-04	TARGET Rewrite		X		
2B96-05	APPENDIX "G" Information Update				X
2B96-06	Deficiency Reporting Information Update	X			
2B96-07	Shelf Life and Service Life Definition				X
2B97-01	Addition of JSOW	X	X		X
2B97-02	Aircraft Armament Equipment Preservation		X		
2B97-03	Aircraft BOMB Information Update	X	X		X
2B97-04	HARM Missile Information Update	X	X		X
2B97-05	Aircraft GUNS Information Update	X	X		X
2B97-07	APPENDIX "J" Rewrite				X
2B97-08	HELLFIRE Missile Information Update	X	X		X
2B97-09	MAVERICK and SIDEARM Missile Information Update	X	X		X
2B97-10	Addition of Surface Weapons			X	X
2B97-11	Addition of CFA Assignments for Airborne Expendable Countermeasures	X			
2B97-12	Clarifying CFA Response to Deficiency Reporting	X			
2B97-13	Information Update Pertaining to Corrosion Control and Preservation	X	X		
2B-1997-00014	Clarification of Maintenance Due Dates (MDD)		X		X
2B-1997-00015	Information Update MAT A/C Impound Time	X			
2B-1997-00016	Information Update MAT Procedures and Operation	X			
2B-1997-00017	Information Update Responsibilities MAT Team Leader	X			
2B-1997-00018	Update PARA 2.2.2.4 Release and Control System Checks	X			
2B-1997-00019	Update PARA 4.4.5.1 Sub (g) ETS Training to Deploying CV's	X			
2B-1997-00020	Update PARA 6.3.9 NAWCWPNS ETS and NAESU ETS Responsibilities, Change ETS to FWST	X			
2B-1997-00023	Update Information Referring CODR and EMR to OPNAVINST 5102.1C	X			
2B-1997-00024	AMRAAM Missile Information Update	X	X		X
2B-1997-00025	Addition of JDAM	X	X		X

Change Proposal Number	Change Recommendation	Incorporated In 8000.16			
		I	II	III	IV
2B-1997-00026	Information Update Deficiency Reporting Chapter 4.6	X			
2B-1998-00001	Delete Figure 6-3-2 "Safety Survey and Assist Checklist"		X		
2B-1998-00002	Delete Figure 6-3-3 "Weapons Loading/Strikedown/Downloading and Recovery Guide"		X		
2B-1998-00003	Addition Definition for Indefinite SIST, APPENDIX "D"				X
2B-1998-00004	Delete PARA 1.3.6 Sub (e) Chapter 1.3 "Retrograde for Recertification and Repair"		X		
2B-1998-00005	Information Update PARA 1.3.4, "ALM Crossdecking Requirements"		X		
2B-1998-00006	Information Update Awards	X	X		X
2B-1998-00007	Update Figure 7-6-1 "Inventory Reporting List of Reportable Aircraft Armament Equipment"		X		
2B-1998-00009	Update Requirements for Firing Reports	X			
RCN 00-0001	R & C System Check team members		X		
RCN 00-0005	Update TARGET Reporting Procedures		X		X
RCN 00-0007	Replace Indefinite SIST with RCM Delete Ref. to Purpose Code "U"	X			X
RCN 00-0014	Define COMNAVRESFOR responsibility for AAE		X		
RCN 00-0018	Addition of new Chapter "Shipboard Weapons Integration Program"	X			
RCN 00-0029	Update information I Level Preservation AAE		X		
RCN 00-0030	JSOW Information Update		X		X
RCN 00-0031	Information Update "Performance Evaluation & Reporting Program"	X			
RCN 00-0032	Change to Appendix "D" delete SIST & Add RCM				X
RCN 00-0033	Appendix "G" MAVERICK Missile Firing Report Change				X
Interim Changes					
001-96	SIST Change HARPOON/SLAM and PENGUIN Missiles				X
002-96	SIST Change SIDEWINDER Missile				X
001-97	SIST Change HELLFIRE, AMRAAM, and Service Life Change MAVERICK Missiles				X
97-0002	Change Promulgates Deficiency Reporting AIG's	X			
97-0003	SIST Change HARPOON/SLAM Missiles				X
97-0004	Addition of SIST for JSOW				X
97-0005	Consolidate CODR and EMR into a single Instruction OPNAVINST 5102.1C	X			
98-0001	SIST Change HARPOON/SLAM Missiles				X
98-0002	SIST Change SPARROW Missile				X
98-0003	SIST Change PHOENIX Missile				X
98-0004	SIST Change SIDEARM Missile and Service Life and Shelf Life Clarification FMU-140, 139 and 143 FUZES				X
98-0005	SIST Change MAVERICK Missiles				X

Change Proposal Number	Change Recommendation	Incorporated In 8000.16A			
		I	II	III	IV
	Interim Changes				
98-0006	Captive Carry HARM Missile NALC PU06 Restricted to 250 Flight Hours	X	X		X
98-0007	SIST Change for AMRAAM Missile and Crossdecking Requirements for Missiles	X			X
98-0008	SIST Change for SLAM Missile				X
98-0009	SIST Change for WALLEYE Missile				X
98-0010	C hange Airborne Weapons Captive Carry Log	X			
98-0011	SIST Change for WALLEYE and HARM Missiles				X
98-0012	SIST Change for WALLEYE				X
98-0013	Deletion of HELLFIRE/TOW Missile Logbooks				X
98-0014	SIST Change for SPARROW Missile				X
98-0015	Information Update "Purpose Code U"		X		X
001-00	Delete "Purpose Code U" and Term "Indefinite SIST" Add RCM Concept	X			X
001-01	SIST Change for PENGUIN Missile				X

APPENDIX F

Reference Guides

APPENDIX F

Instruction to Subject

Reference Guide

Instruction Number

Title

Paragraph Reference

Title 10, U.S. Code, Section 124
 Presidential Authorization for Establishment of Specified Combatant Commands to Perform Military Missions
 Vol. I, 1.4.7 Dual Chains of Command

Title 10, U.S. Code, Section 5082
 Assigns Responsibility to CNO, Personnel, and Material Requirements
 Vol. I, 1.4.4 Administrative Control of Combatant Forces

Title 10, U.S. Code, Section 2403
 Vol. I, 4.3.9.2 Warranties

DEPARTMENT OF DEFENSE DIRECTIVES/INSTRUCTIONS/MANUALS

DoD Instruction 4100.33 of 9 September 1985
 Commercial Activities Program Procedures (NOTAL)
 Vol. I, 4.3.24.5 Repair Turn Around Time

DoD Directive 4140.1 of 4 January 1993
 Materiel Management Policy
 Vol. III, 6.3.1.1 Commodity Classification System

DoD Directive 4151.18 of 12 August 1992
 Maintenance of Military Materiel (NOTAL)
 Vol. I, 1.3.1.2 Maintenance Concepts

DoD Directive 5000.1 of 23 October 2000
 Defense Acquisition System (NOTAL)
 Vol. I, 6.1.1 General
 Vol. III, 3.1.1 Major and Non-Major Defense Acquisition Programs

DoD Directive 5160.65 of 8 March 1995
 Single Manager For Conventional Ammunition (SMCA) (NOTAL)
 Vol. I, 5.6.4.2 System Control and Administration
 Vol. III, 1.2.3 Single Manager for Conventional Ammunition (SMCA)

DoD 5200.1-R (January 1997)
 Information Security Program
 Vol. II, 6.2.7.3.1,a Transportation of Explosives
 Vol. II, 6.2.7.3.4 Off Station Shipments

DoD Directive 6055.9 of 29 July 1996
 Vol. III, 1.2.5.4 DoD Explosive Safety Board (DDESB) and DoD Component Explosives Safety Responsibilities

DoT Exemption E-868
 Vol. II, 6.2.7.3.4 Off Station Shipments
 Vol. II, 6.2.7.3.5,d Official Seals

Instruction Number
Title
Paragraph Reference

DoD Directive 5100.76 of 10 February 1981

Physical Security Board

Vol. III, 7.2.1.4 Responsible for Supervising Navy Physical Security Matters, and Coordinates Physical Security Policy, Programs, and Guidance Which Effect Navy and Marine Corps Forces Mutually with the CMC

DoD Instruction 7045.7 of 23 May 1984

Implementation of the Planning, Programming, and Budgeting System (PPBS)

Vol. III, 2.2.1.1 Mechanism By Which the Strategic Concepts and Initiatives of the Services are Coordinated and Approved Within DoD

Vol. III, 2.2.5.4 Reflects the Total Resources Programmed by DoD by Fiscal Year

DoD Manual 4160.21-M of August 1997

Defense Reutilization and Marketing Manual

Vol. III, 8.1.1.1 Disposal Policy

DoD Manual 4160.21-M-1 of October 1991

Defense Demilitarization Manual

Vol. III, 6.3.1.6 The Stock List of Navy Ammunition

DoD Manual 5160.65-M of April 1989

Single Manager for Conventional Ammunition (Implementing Joint Conventional Ammunition Policies and Procedures)

Vol. III, 1.2.2.1 To Streamline Non-Nuclear Ordnance Management, Designating the Secretary of the Army as the SMCA

Vol. III, 1.2.3 Executive Director for Conventional Ammunition (EDCA)

Vol. III, 2.4.2 IPP Planning Concepts

Vol. III, 3.3.3 Full Scale Production/Limited Production

SECRETARY OF THE NAVY INSTRUCTIONS

SECNAVINST 4855.5A

Product Quality Deficiency Report Program

Vol. I, 5.6.9.3

SECNAVINST 4855.3A

Product Data Reporting and Evaluation Program (PDREP)

Vol. III, 3.2.2.2 Acquisition Engineering Agent.

Vol. III, 4.4.6.1 Report of Discrepancy

SECNAVINST 5000.2B

Implementation of Mandatory Procedures for Major and Non-Major Defense Acquisition Programs and Major and Non-Major Information Technology Acquisition Programs

Vol. I, 4.1.4.1 Integrated Logistics Support Policy and Readiness

Vol. I, 4.1.4.1.a. Guidance

Vol. I, 4.1.4.1.f. Resources

Vol. I, 4.2.4.1, Logistics Support Analysis

Vol. I, 4.2.2 ILS Elements

Vol. I, 5.1.4.2 AWIS

Vol. I, 5.2.4.8 AWIS, Life Cycle Management for Information Systems

Vol. I, 5.5.1.1. Configuration and Data Management Support System (CADMSS)

Instruction Number
Title
Paragraph Reference

SECNAVINST 5212.5D
 Navy and Marine Corps Records Disposition Manual
 Vol. II, 1.4.14.2 Logbook Maintenance
 Vol. IV, I.1

SECNAVINST 5214.2B
 Department of the Navy (DoN) Information Requirements (Reports) Management Program (NOTAL)
 OPNAVINST 8600.2B, Page 5

SECNAVINST 5400.14A
 Assignment and Distribution of Authority and Responsibilities for the Administration of Shore Activities of the
 DON, and Coordination of Naval Personnel Located Ashore (NOTAL)
 Vol. I, 1.4.48 Shore Establishments Functions and Responsibilities

SECNAVINST 5500.29B
 Use of Deadly Force and the Carrying of Firearms by Personnel of the Department of the Navy in Conjunction
 with Law Enforcement, Security Duties and Personal Protection
 Vol. III, 7.2.1.4 Responsible for Supervising Navy Physical Security Matters, and Coordinates
 Physical Security Policy, Programs, and Guidance Which Affect Navy and
 Marine Corps Forces Mutually with the CMC

SECNAVINST 5510.30A
 DoN Personnel Security Program Regulation
 Vol. II, Fig. 6-2-1 Bibliography of Applicable References

OPNAV DIRECTIVES and PUBLICATIONS

OPNAVINST 3100.6G 1 March 2000
 Special Incident Reporting (OPREP-3, Navy Blue and Unit SITREP) Procedures (NOTAL)
 Vol. II, Fig. 6-2-1 Bibliography of Applicable References
 Vol. III, 7.2.1.4 Responsible for Supervising Navy Physical Security Matters, and Coordinates
 Physical Security Policy, Programs, and Guidance Which Effect Navy and
 Marine Corps Forces Mutually with the CMC

OPNAVINST 43P6B
 Metrology Automated System for Uniform Recall and Reporting (MEASURE) Users Manual (NOTAL)
 Vol. II, 8.1.18.2 Metrology and Calibration Program

OPNAVINST 1540.2E
 Naval Aviation Maintenance Training (NAMTRA) Program (NOTAL)
 Vol. I, 6.3.6a Organizational Level

OPNAVINST 4000.79A
 Policy for U.S. Navy Support of the U.S. Coast Guard
 Vol. III, 6.6.3.2 Policy of Exchanging Personnel, Vessels, Facilities, Equipment, Supplies, and Services
 Between the Navy and the U.S. Coast Guard

Instruction Number

Title

Paragraph Reference

OPNAVINST 4850.1B

Navy Ordnance Rework Requirements Policy (NOTAL)

Vol. I, 2.1.4.2 Asset Readiness

Vol. III, 5.2.1.1 Maximize Fleet Readiness

OPNAVINST 8010.12F

Naval Conventional Ordnance Operational Logistics Policy (NOTAL)

Vol. II, 6.2.3.1 Ammunition Allowances

Vol. II, Fig. 6-2-1 Bibliography of Applicable References

Vol. III, 2.3.3.1 Approves and Promulgates the WRMR Combat Allocations to FLTCinCs, PEOs, and PMs

OPNAVINST 3100.6G

Special Incident Reporting (OPREP-3, Navy Blue and Unit SITREP) Procedures (NOTAL)

Vol. II, Fig. 6-2-1 Bibliography of Applicable References

OPNAVINST 3120.32C

Standard Organization and Regulations of the U.S. Navy (NOTAL)

OPNAVINST 3750.6R

Naval Aviation Safety Program (NOTAL)

Vol. I, 4.6.14.5,e. PQDR, Master Repairable Items List, Disposition

Vol. I, 4.6.19.3,d. Mandatory Investigation Requirements for Activated Aircraft Escape systems

Vol. I, 4.6.23.1,b Engineering Investigations

Vol. I, 4.6.23 Engineering Investigation Item Disposition

Vol. I, Fig. 4-6-3 Processing of Conventional Ordnance Deficiency Program Reports

OPNAVINST 4441.12C

Retail Supply Support of Naval Activities and Operating Forces (NOTAL)

Fixed Allowances for Depot and Field Level Repairables

Vol. I, 4.3.23.1 Fixed allowances

OPNAVINST 4614.1F

Uniform Material Movement and Issue Priority System (UMMIPS)

Vol. I, 4.3.25.6 UMMIPS

Vol. I, 4.3.29.1 FADs

Vol. III, 6.6.2.4 Efficient Movement and Issue of Non-Nuclear Ordnance

OPNAVINST 4790.2H

The Naval Aviation Maintenance Program (NOTAL)

Vol. I, 2.2.9.1 Armament Support Equipment, Maintenance Data Reporting

Vol. I, 2.3.13.2.4 Production Functions

Vol. I, 4.6.2 Naval Aviation Maintenance Deficiency Reporting Program

Vol. I, 5.6.9.3 Quality Deficiency Evaluation and Analysis

Vol. II, 3.1.6.2 SRC, EHR, and EOR cards

Vol. II, 4.1.3 UAV Maintenance

Vol. II, 4.1.3.1 RPV Maintenance

Vol. II, 5.2.2.2.18,a. Full Scale Target Logbooks

Vol. II, 5.4.7.1 Targets D-Level

Vol. II, 6.1.6 Explosive Mishap Investigations and Reporting

Vol. II, Fig. 6-3-2 Safety Survey and Assist Checklist

Vol. II, Fig. 6-2-1 Bibliography of References

Vol. II, 8.1.18.1 Planned Maintenance System

Instruction Number
Title
Paragraph Reference

Vol. II, 8.1.18.4	Fluid Handling Program
Vol. II, 8.1.18.6.1	Tool Control Program
Vol. II, 8.1.18.7	VIDS
Vol. II, 8.1.20	Component Repair Program
Vol. II, 8.1.21.6,b.	2M Module Repair Program

OPNAVINST 5090.1B

Environmental and Natural Resources Program Manual

Vol. III, 7.4.1.1	Federal Regulations and DoD Requirements Which Apply to Navy Ships and Shore Activities
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OPNAVINST 5090.1B CH-1

Joint Regulation Governing the Use and Application of Uniform Source, Maintenance, and Recoverability (SM&R) Codes

Vol. I, 4.3.7.7	Source, Maintenance, and Recoverability Codes
Vol. II, 8.1.18.5.3	Support Equipment Licensing

OPNAVINST 5100.19D

Navy Occupational Safety and Health (NAVOSH) Program Manual for Forces Afloat (NOTAL)

Vol. I, 4.6.23.1,b.	Responsibilities of Other Activities Involved in EI Processing
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OPNAVINST 5102.1C

Mishap Investigation and Reporting (NOTAL)

Vol. I, 4.6.2	CODR or CODR/EMR
Vol. I, 4.6.15,c.(8)	CAT I PQDR Message Preparation
Vol. I, 4.6.23.1,b.	Handling and Preparation of EI Material
Vol. I, 4-6-7	CODR Message Preparation
Vol. II, Fig. 6-2-1	Bibliography of Applicable References
Vol. III, 4.4.2.2	Explosive Mishap Categories

OPNAVINST 5442.2G

Aircraft Inventory Reporting System (AIRS) (NOTAL)

Vol. IV, H-59	VIDS/MAF
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OPNAVINST 5513.1E

Department of The Navy Security Classification Guides

Vol. I, 4.6.15,d.	CAT I PQDR Message Preparation
Vol. I, 4.6.17,d.	CAT I Response Message Security Classification
Vol. I, 4.6.18,d.	CFA CAT I Final Response Security Classification
Vol. I, 4.6.22,d.	CODR CFA Final Response Message Preparation
Vol. I, 4.6.20,d.	CODR, CODR/EMR Message Preparation
Vol. I, 4.6.21,d.	CODR Response Message Preparation
Vol. I, 4.6.25,d.	CAT I TPDR Message Classification
Vol. I, 4.6.27,d.	CAT II TPDR Response

OPNAVINST 5530.13B

Department of the Navy Physical Security Instruction for Conventional Arms, Ammunition, and Explosives (AA&E) (NOTAL)

Vol. II, 3.1.5	Gun System Security
Vol. II, 6.1.7.2	AA&E Security
Vol. II, 6.2.7.3.1	Transportation of Explosives
Vol. II, 6.2.7.3.4	Off Station Shipment
Vol. II, 6.2.8.2	Physical Security of A&E in Station Magazines
Vol. II, Fig. 6-2-1	Bibliography of Applicable References

Instruction Number
Title
Paragraph Reference

Vol. III, 7.2.1.1 Specific Guidance on the Physical Security of AA&E

OPNAVINST 5530.14C

Navy Physical Security (NOTAL)

Vol. II, 6.1.8 Physical Security and Loss Prevention Program

OPNAVINST 8015.2

Ordnance Inventory Accountability (NOTAL)

Vol. II, 6.5.10 CV & CVN

Vol. III, 2.3.2.1 Sets the Broad Planning Objectives in Terms of Wartime Planning and Mobilization Scenarios

Vol. III, 2.3.4.3 Inventory Status of Stocks and Inventory Gains and Losses are Incorporated into the MPS from Monthly Worldwide Asset and Expenditure Reports

OPNAVINST 8000.14C

Materiel Planning Study

Vol. III, 2.3.4.3 Provides Budget and Program Backup Data, Specifies Inventory Objectives,
Serves as a Basis for Detailed Procurement and Production Analysis and Planning,
Provides a Means of Exchanging Requirements and Production Information with the SMCA

OPNAVINST 8000.15

Accountability for Expendable Ordnance

OPNAVINST 8011.9A

Non-Nuclear Ordnance Requirements (NNOR) Process (NOTAL)

Vol. I, 2.1.4.1 Policies, procedures, and maintenance processes

Vol. II, 1.1.5 Air Launched Missile (ALM) Inventory Management

Vol. III, 2.3.2.1 Sets the Broad Planning Objectives in Terms of Wartime Planning and Mobilization Scenarios

OPNAVINST 8020.14 or MCO P8020.11

Department of the Navy Explosives Safety Policy Manual (NOTAL)

Vol. II, 1.2.3 Air Launch Missile, Organizational Level

Vol. II, 1.3.7 Air Launch Missile, Intermediate Level

Vol. II, 1.4.16 ALM AUR Depot level

Vol. II, 2.2.3 Ordnance and Ammunition, O-Level

Vol. II, 2.3.5 Ordnance and Ammunition, I-Level

Vol. II, 2.4.5 Ordnance and Ammunition, D-Level

Vol. II, 3.2.3 Guns or Gun Systems

Vol. II, 3.3.3 Guns or Gun Systems

Vol. II, 3.4.6 Guns or Gun Systems

Vol. II, 4.2.3 TALD O Level Maintenance

Vol. II, 4.3.4 TALD I Level Maintenance

Vol. II, 5.1.4.4 Targets (AQM-37C)

Vol. II, 5.2.4 Targets O-Level

Vol. II, 5.4.8 Targets D-Level

Vol. II, 6.1.4.5 Weapons Handling and Movement

Vol. II, 6.1.5.2 Weapons Handling Procedures

Vol. II, 6.1.5.3 Weapons Handling Procedures

Vol. II, 6.1.11.1 Self Propelled Vehicles and Equipment Carrying Explosives

Vol. II, 6.1.13.1 Stowage and Handling Regulations Instruction

Vol. II, 6.1.13.3 Explosives Safety Waiver/Exemption Submission

Vol. II, 6.1.16 Working Parties

Instruction Number
Title
Paragraph Reference

Vol. II, 6-2-1	Bibliography of Applicable Instructions
Vol. II, 6.2.8.3	Ammunition Storage Requirements
Vol. II, 6.2.8.3	Waiver or Exemption of Stowage Requirements
Vol. II, 6.2.11.1	Aircraft Loading and Downloading
Vol. II, 6.3.2.1,a.	Conventional Weapons Handling Procedures Afloat
Vol. II, 6.3.14.1	Aircraft Loading and Down Loading L-Class Ships
Vol. II, 6.4.2	Weapons Handling Ammunition Ships
Vol. II, 6.4.6.3	Ammunition Loading Ammunition Ships
Vol. II, 6.4.8.15,c.	Underway Transfer, Ammunition Ships
Vol. II, 6.5.3.1,h.	CV & CVN
Vol. II, 7.2.3	AAE O-Level
Vol. II, 7.3.3	AAE I-Level
Vol. II, 7.4.8	AAE D-Level
Vol. II, 8.1.23	AWSE, Handling Explosive Ordnance
Vol. II, 8.2.4	AWSE, Handling Explosive Ordnance, O-Level
Vol. II, 8.3.11	AWSE, Handling Explosive Ordnance, I-Level
Vol. III, 6.6.2.1	Specific Ordnance Requisitioning Procedures, Ashore and Afloat
Vol. III, 7.1.1.4	Responsible for Supervising Navy Explosives Safety Matters
Vol. III, 7.1.7.1	Navy Combatant Ships and Tenders Must Comply with the Standards While Berthed at U.S. Naval Stations and Similar Support Activities

OPNAVINST 8026.2A

Navy Munitions Disposal Program

Vol. III, 8.1.2.2 Defines the Disposal Program for the Navy

OPNAVINST 8027.6E

Naval Responsibilities for Explosive Ordnance Disposal (EOD) (NOTAL)

Vol. II, 6.1.12.2 Explosive Ordnance Disposal

NAVSEA DIRECTIVES and PUBLICATIONS

NAVSEA OD O

Index of Ordnance Data (NOTAL)

Vol. IV, K List of Relevant Publications

NAVSEA OD 10773

Electroexplosive Devices, Safety Principles for Operations Involving (NOTAL)

Vol. IV, K List of Relevant Publications

NAVSEA OD 16135

Navy Ammunition Logistics Codes (NALC) (NOTAL)

Superseded by TW 010-AA-ORD-030

Vol. IV, A2,d.4 Air Launched Missile Configuration Data

NAVSEA OD 30000

Ordnance Equipment Lubrication (NOTAL)

Vol. IV, K List of Relevant Publications

Instruction Number
Title
Paragraph Reference

NAVSEA OP 4

Ammunition Afloat (NOTAL)

Vol. II, 1.1.9.1,a.	Deep Stowage (Afloat)
Vol. II, 2.2.2.1	Magazine Stowage Afloat
Vol. II, 2.3.2.2	Storage and Handling Afloat
Vol. II, 6.3.2.1,b.	Ammunition Afloat Secured IAW OP-4
Vol. II, 6.3.2.1,c.	Daily Inspections of Ammunition Magazines
Vol. II, 6.3.2.1,d.	Weapons Handling Equipment Inspection
Vol. II, 6.3.9	L-Class Ships
Vol. II, 6.3.13.1	Assembly/Disassembly L-Class
Vol. II, 6.4.6.3	Pier Loadout, Ammunition Ships
Vol. II, 6.4.6.5,g.	Fire Equipment, Ammunition Ships
Vol. II, 6.4.8.2	Underway Transfer of Ammunition
Vol. II, 6.4.8.15,f.	Ammunition Ships
Vol. II, 6.5.8.5.1	CV & CVN
Vol. III, 1.2.5.2	Establish and Recommend Safety Standards
Vol. III, 7.1.1.4	Responsible for Supervising Navy Explosives Safety Matters
Vol. IV, K	List of Relevant Publications

NAVSEA OP 5 Volume I (NOTAL) (OP 5 Volume II, Superseded by NAVSEA 020-AC-SAF-010)

Ammunition and Explosives Ashore, Safety Regulations for Handling, Storing, Production, Renovation, and Shipping Ammunition Ashore (NOTAL)

Vol. II, 1.1.9.2	Deep Stowage (Ashore)
Vol. II, 1.1.11	Missile Sentencing Inspection
Vol. II, 2.2.2.1	ALM Magazine Stowage Ashore
Vol. II, 2.3.2.2	Ordnance and Ammunition Storage and Handling and USMC Advanced Base Storage areas
Vol. II, 2.4.2.2	Weapons, Ordnance, and Ordnance Components Storage
Vol. II, 6.2.8.1	Magazines and magazine Areas
Vol. II, 6.2.8.3	Ammunition Storage Requirements
Vol. II, 6.2.9.1	Assembly and Disassembly
Vol. II 6.2.10.1	Ordnance Handling and Loading Pads and Combat Aircraft loading Areas
Vol. II, 6.2.11.2	Aircraft Loading and Downloading
Vol. II, 6.2.18.2	Cargo Aircraft Loading and Downloading(Volume 1)
Vol. II, 6.2.18.3	Maintenance on Cargo Aircraft Carrying Explosives
Vol. II, 6.2.19.3	Aircraft Grounding
Vol. II, Fig. 6-2-1	Bibliography of Applicable References
Vol. III, 1.2.5.2	Establish and Recommend Safety Standards
Vol. III, 7.1.1.4	Responsible for Supervising Navy Explosives Safety Matters

NAVSEA OP 1014

Ordnance Safety Precautions, Origin, and Necessity (NOTAL)

Vol. II, Fig. 6-2-1	Bibliography of Applicable References
Vol. IV, K	List of Relevant Publications

NAVSEA SW020-AG-SAF-010 (Volume 1) Navy Transportation Safety Handbook for Hazardous Materials, Ammunition
 NAVSEA 020-AC-SAF-010 (Volume II) Transportation and Storage Data for Ammunition, Explosives and Related

Hazardous material

Vol. I, 5.6.3.5,g.	CAIMS
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Instruction Number
Title
Paragraph Reference

Vol. II, 2.4.2.2	Weapons, Ordnance, and Ordnance Components Storage
Vol. II, 6.2.7.1	Vehicle Electrical/Mechanical Systems and Safety Equipment
Vol. II, 6.2.7.3.1,g.	Off Station Movement of Explosives
Vol. II, 6.2.7.3.4	Shipment Security and Documentation
Vol. II, 6.2.7.3.9	Discrepant Sealed Shipments
Vol. II, Fig. 6-2-1	Bibliography of Applicable References
Vol. III, 7.3.2.1	Requirements for Explosives Safety During Transportation
Vol. III, 7.1.1.4	Responsibilities
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Handling and Stowage of Naval Ordnance Aboard Ammunition Ships Material Handling Equipment
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Safety Handbook for Material Handling Operators (NOTAL)

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NAVSEA OP 3681

Motor Vehicle and Railcar Shipping, Inspection Manual for Ammunition, Explosives, and Other Hazardous Materials

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NAVSEA OP 4016

Truck, Handlift, Mk 45 Mod 0, 1, Description of Operation and Maintenance w/IPB (NOTAL)

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NAVSEA OP 4098

Ammunition Handling, Explosives, and Hazardous Material with Industrial Materials Handling Equipment (MHE) (NOTAL)

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Close in Weapon System, Mk 15 Mod 1 thru 4 and 6 (PHALANX) (NOTAL)

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NAVSEA OP 4335

Small Arms and Special Warfare Ammunition, Description, and Maintenance (NOTAL)

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NAVSEA OP 4550

Handling and Storage of Amphibious Assault Ammunition Aboard Amphibious Ships (NOTAL)

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On-Station Movement Ammunition and Explosives By Truck and Railcar (NOTAL)

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NAVSEA TO-300-AM-ORD-010

Weapons and Combat Systems Quality Assurance Requirements for Shore Stations and Engineering Agents

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Emergency Response Procedures to Transportation Accident or Incidents Involving Conventional DoD Munitions and Explosives

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 Standard Operating Procedures for the Processing of Expendable Ordnance at Navy and Marine Corps Activities
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NAVSEA SG420-AP-MMA-010
 Periodic Testing Arrangements for Ordnance Handling Equipment (NOTAL)
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NAVSEA SG420-B1-WHS-010
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NAVSEA SG420-B1-WHS-020
 Air Launched Weapons Handling and Stowage (NOTAL)
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NAVSEA SG420-B5-WHS-010
 Technical Manual for Handling and Stowage of Air Launched Weapons Aboard Amphibious Ships (NOTAL)
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NAVSEA SG818-AM-MMO-010
 Elevator Cargo/Weapons Handling Maintenance Manual (NOTAL)
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NAVSEA SW012-AA-MMA-010/020
Complete Round Dictionary (NOTAL)
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NAVSEA SW023-AA-ORD-030
Shipboard Ammunition and Weapons Data (NOTAL)
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Navy Gun Ammunition (NOTAL)
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NAVSEA SW050-AB-MMA-010
Pyrotechnic, Screening, Marking, and Countermeasure Devices (NOTAL)
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NAVSEA SW0231-AG-WHM-010
On-Station Movement of Ammunition and Explosives by Track and Railcar
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Handling Ammunition, Explosives and Hazardous Materials with Industrial Materials Handling Equipment (MHE)
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NAVSEA SW300-BC-SAF-010
Clearing of Live Ammunition from Guns (NOTAL)
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NAVSEA S9000-AB-GTP-010
Shipboard Safety and Damage Control Facilities for Stowage of HYPERGOLIC Fueled Missiles and
Fuel-Air-Explosive (FAE) Bombs (NOTAL)
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NAVSEA S9086-XG-STM-000/CH-700R2
Weapons Handling Equipment Inspection and Test (NOTAL)
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NAVSEA S9570-AA-MMA-010
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NAVSEA S9570-AD-CAT-101
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NAVSEA S9571-AA-MMA-010
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NAVSEA S9LHA-AA-WHM-010
 Handling and Stowage Procedures for Ground and Air Delivered NUCLEAR Weapons Aboard LHA-1 Class Ships (NOTAL)
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NAVAIR AW820CE-MIB-010
 AGM-65E/F MAVERICK Guided Missile Intermediate Maintenance Instructions (Fleet) with Illustrated Parts Breakdown (NOTAL)
 Vol. II, 1.3.2,g. Intermediate Level Maintenance Responsibilities

NAVAIR AW820CE-MIB-020
 AGM-65E/F MAVERICK Guided Missile, Intermediate Maintenance Instructions w/IPB at WSF (NOTAL)
 Vol. II, 1.4.4.3,g. Repackaging

NAVAIR AW820HN-MIB-000
 Organizational (Fleet) Maintenance Manual With Illustrated Parts Breakdown (NOTAL)
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NAVAIR AW820YB-MIB-000
 HELLFIRE Surface Attack Guided Missile (AGM-114B) (NOTAL)
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NAVAIR AW820YB-MIB-100
 HELLFIRE Surface Attack Guided Missile (AGM-114B), Training Guided Missile M-36, and Dummy Guided Missile M-34
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 NATOPS U.S. Navy Aircraft Fire Fighting and Rescue Manual (NOTAL)
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NAVAIR 00-80T-106

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AW-820HN-NWS-300

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AW-820HN-NWS-500

Intermediate (Weapon Station) Maintenance w/IPB HARPOONMissile TARTAR Configurations

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AW-820HN-NWS-700

Intermediate (Weapon Station) Maintenance w/IPB HARPOON Missile Canister Configurations

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Intermediate (Weapon Station) Maintenance w/IPB HARPOONMissile/SLAM/SLAM ER Airlaunch Configurations

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Captive Air Training Missile (CATM-88A, CATM-88B) Dummy Air Training Missile (DATM-88A) (NOTAL)

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Organizational and Intermediate Maintenance With Illustrated Parts Breakdown, SIDEARM Guided Missile AGM-122A, Air Training Missile (ATM-122A) and Captive Carry Missile SIDEARM (CATM-122A) (NOTAL)

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NAVAIR 01-AGM-122A-2.1

Intermediate Maintenance With Illustrated Parts Breakdown (Naval Weapons Station), SIDEARM Guided Missile AGM-122A, Air Training Missile (ATM-122A), and Captive-Carry Missile (CATM-122A) (NOTAL)

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NAVAIR 01-AIM9-2

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 Attack Guided Missile Assembly Checkout Maintenance Instructions w/IPB Intermediate (NOTAL)
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NAVAIR 01-80GMB-2.1
 Intermediate Maintenance with Illustrated Parts Breakdown (Naval Weapons Stations and Mobile Missile Maintenance Unit) Guided Missile AIM-9G/H and Training Missiles (NOTAL)
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 AQM-37A (Beech) Missile Target Maintenance Instructions w/IPB (NOTAL)
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NAVAIR 01-700
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Airborne Weapons System Firing Report

APPENDIX G

Airborne Weapon System Firing Report

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Weapon/Missile												
No.	Event Parameters	AIM-120 AMRAAM AIM-54 PHOENIX	AIM-7 SPARROW	AIM-9 SWD	AGM-154A/B/C JSOW	AGM-122A SIDEARM AGM-88 HARM	LGB/GBU	AGM-84 HARPOON	GATOR ROCKEYE (NOTE 4)	AGM-84E-1C SLAM/ AGM-84H-1 SLAM ER	AGM-119B PENGUIN	TALD
1.	Range Designator, or Warning Area Geographical Location (e.g. AFWTF, NAWCWPNDIV PT. MUGU, PMRF, W72A, IRAQ, OPEN OCEAN PACIFIC)	X	X	X	X	X	X	X	X	X	X	X
2.	Squadron Identifier (e.g. VMFA-122, VA-75, VP-65, VF-74, etc.)	X	X	X	X	X	X	X	X	X	X	X
3.	Attempt, Firing, or Release Date/Range Event Number (e.g. 7 OCT 81/324, etc.)	X	X	X	X	X	X	X	X	X	X	X
4.	Aircraft Takeoff Location (e.g. USS AMERICA, Miramar, Diego Garcia, etc.)	X	X	X	X	X	X	X	X	X	X	X
5.	Aircraft Type/Model/Buno (e.g. F/A-18C/ 163599, F-14A Plus/ 18599, A-6E/160222, etc.)	X	X	X	X	X	X	X	X	X	X	
6.	WCS or Aircraft Sensor Configuration (e.g. AWG-9, APG-65, ALQ-99, TRAM, etc.)	X	X	X		X	X	X	X	X	X	
7.	Tactical Tape or Aircraft Sensor Model Used (e.g. 2004, 115A, SWIP, Update IV, etc.)	X	X	X	X	X	X	X	X	X	X	X

AIRBORNE WEAPONS SYSTEM FIRING REPORT

Weapon/Missile

No.	Event Parameters	AIM-120 AMRAAM AIM-54 PHOENIX	AIM-7 SPARROW	AIM-9 SWD	AGM-154A/B/C JSOW	AGM-122A SIDEARM AGM-45 SHRIKE AGM-88 HARM	LGB/GBU	AGM-84 HARPOON	GATOR ROCKEYE (NOTE 4)	AGM-84E-1C SLAM/ AGM-84H-1 SLAM ER	AGM-119B PENGUIN	TALD
8.	Aircraft Weapon Station Used (e.g. 2A, 9, 6, etc.)	X	X	X	X	X	X	X	X	X	X	X
9.	Missile or Weapon Type/ Model/Serial Number (e.g. AIM-7F/R-60145, AGM-84D-1/1555055 etc.)	X	X	X	X	X	X	X	X	X	X	
10.	Target Type (e.g. BQM-34S, Hulk, Tank, etc.)	X	X	X	X	X	X	X	X	X	X	
11.	Target Augmentation Used/Operation(Emitter for HARM or SHRIKE) (SEE NOTE 1) (e.g. Lens/SAT, Lens/Flare/ UNSAT, Tow Body/ None/TWT/SAT, TWT/ UNSAT, TX-20/SAT, etc.)	X	X	X		X	X	X	X	X	X	
12.	Target DECM or DCM X ConfigurationType/Op- eration (e.g. DLQ-3/ SAT, ALE-44/SAT, etc.)	X	X	X		X	X	X	X	X	X	
13.	TargetProfileSimulation (e.g. ASM, Bomber, Tank, etc.)	X	X	X		X	X	X	X	X	X	
14.	WCS or Searcher Sense Mode (e.g. PDS, Passive, TWS, VTAS, IR, BRST, etc.)	X	X	X		X	X	X	X	X	X	

AIRBORNE WEAPONS SYSTEM FIRING REPORT

Weapon/Missile

No.	Event Parameters	AIM-120 AMRAAM AIM-54 PHOENIX	AIM-7 SPARROW	AIM-9 SWD	AGM-154A/B/C JSOW	AGM-122A SIDEARM AGM-88 HARM	LGB/GBU	AGM-84 HARPOON	GATOR ROCKEYE (NOTE 4)	AGM-84E-1C SLAM/ AGM-84H-1 SLAM ER	AGM-119B PENGUIN	TALD
15.	Opportunity Range (NMI)	X	X	X		X	X	X	X	X	X	
16.	Run Number/Shot Number (e.g. 2/6, 1/1, etc.)	X	X	X	X	X	X	X	X	X	X	
17.	Detection Range (NMI)	X	X	X		X	X	X	X	X	X	
18.	WCS or Sensor Acquisition Mode (e.g. PSTT, BRST, Passive, VTAS, IR, etc.)	X	X	X		X	X	X	X	X	X	
19.	Acquisition Range (NMI)	X	X	X		X	X	X	X	X	X	X
20.	Time of Missile or Weapon Release (Local Date and Time Group) (e.g. 101530H MAY 87 etc.)	X	X	X	X	X	X	X	X	X	X	
21.	WCS or Sensor Fox Mode (e.g. PDSTT, BRST, TWS, Passive, etc.)	X	X	X		X	X	X	X	X	X	X
22.	Optimum Range (NMI)	X	X	X		X	X					
23.	Aircraft Altitude at Fox or Weapon Release (FT) (MSL, AGL)	X	X	X	X	X	X	X	X	X	X	X
24.	Aircraft Mach/True Air Speed at Fox or Weapon Release (IMN/KN) (e.g. 0.75/430, 0.81/520, etc.)	X	X	X	X	X	X	X	X	X	X	X

AIRBORNE WEAPONS SYSTEM FIRING REPORT

Weapon/Missile

No.	Event Parameters	AIM-120 AMRAAM AIM-54 PHOENIX	AIM-7 SPARROW	AIM-9 SWD	AGM-154A/B/C JSOW	AGM-122A SIDEARM AGM-88 HARM	LGB/GBU	AGM-84 HARPOON	GATOR ROCKEYE (NOTE 4)	AGM-84E-1C SLAM/ AGM-84H-1 SLAM ER	AGM-119B PENGUIN	TALD
25.	Aircraft Magnetic Heading at Fox or Weapon Release (DEG True)	X	X	X	X	X	X	X	X	X	X	X
26.	Aircraft Acceleration at Fox or Weapon Release (G's) (e.g. Minus 1.2, Plus 3.2, etc.)	X	X	X	X	X	X	X	X	X	X	X
27.	Aircraft Pitch Angle at Fox or Weapon Release (DEG) (14 UP, 9 DN, etc.)	X	X	X	X	X	X	X	X	X	X	X
28.	Aircraft Roll Angle at Fox or Weapon Release (DEG) (35 Right, 3 Left, etc.)	X	X	X	X	X	X	X	X	X	X	
29.	Target Altitude at Fox (FT) (MSL, AGL)	X	X	X								
30.	Target Mach and True Air Speed at Fox (IMN/ N) (e.g. 0.74/430, 0.57/274, etc.)	X	X	X								
31.	Target Flight Condition/ Acceleration at Fox (G's) (e.g. Level/1.0, Turning/ 3.0, Diving/ 0.8, etc.)	X	X	X								
32.	Launch Aircraft Maneuver/Acceleration after Fox or Weapon Release (G's) (e.g. 30 DEG Turn/2.0, 40 DEG F-Pole/1.5, etc.)	X	X	X		X	X			X		

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AIRBORNE WEAPONS SYSTEM FIRING REPORT

Weapon/Missile

No.	Event Parameters	AIM-120 AMRAAM AIM-54 PHOENIX	AIM-7 SPARROW	AIM-9 SWD	AGM-154A/B/C JSOW	AGM-122A SIDEARM AGM-88 HARM	LGB/GBU	AGM-84 HARPOON	GATOR ROCKEYE (NOTE 4)	AGM-84E-1C SLAM/ AGM-84H-1 SLAM ER	AGM-119B PENGUIN	TALD
33.	Target Maneuver/Acceleration after Fox or Weapon Release (G's) (IF APPLICABLE) (e.g. 45 DEG Turn/2.5, 1000ft Altitude Jink/1.5, etc.)	X	X	X		X	X	X	X	X	X	
34.	Range or Slant Range at Fox or Weapon Release (NMI)	X	X	X	X	X	X	X	X	X	X	
35.	Range Rate at Fox or Weapon Release (NMI)	X	X	X		X	X	X	X	X	X	
36.	Relative Target Bearing from Aircraft at Fox or Weapon Release (DEG) (e.g. 030 Right, 109 Left etc.)	X	X	X	X	X	X	X	X	X	X	
37.	Track Crossing Angle (DEG)	X	X	X								
38.	Target Aspect Angle (DEG Left or Right that Aircraft bears from Targets Nose) (25 Left, 145 Right, etc.)	X	X	X		X	X	X	X	X	X	
39.	Steering Dot Position at Fox (DEG) (e.g. 3 DEG at 2 O'Clock, etc.)	X	X	X								
40.	WCS Look Angle at Fox (e.g. 10 Up/2 Left, 5 Down/32 Right, etc.)	X	X	X								

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AIRBORNE WEAPONS SYSTEM FIRING REPORT												
Weapon/Missile												
No.	Event Parameters	AIM-120 AMRAAM AIM-54 PHOENIX	AIM-7 SPARROW	AIM-9 SWD	AGM-154A/B/C JSOW	AGM-122A SIDEARM AGM-88 HARM	LGB/GBU	AGM-84 HARPOON	GATOR ROCKEYE (NOTE 4)	AGM-84E-1C SLAM/ AGM-84H-1 SLAM ER	AGM-119B PENGUIN	TALD
41.	Lead/Lag from BRST (DEG) (e.g. 3 Lead, 24 LAG, etc.) (AIM-9 Shots only)			X								X
42.	Degrees off BRST (DEG) (e.g. 29 Left at 10 O'Clock, etc.) (AIM-9 Shots only)			X								X
43.	Missile Launch or Weapon Release Mode (NOT APPLICABLE FOR SHRIKE) (e.g. PD, CW, BRST, SEAM, SDA, CSA, Normal- Active, PB, SP, Too, RBML, BOL, RBL-MED, RBL-SM, LOS, etc.)	X	X	X		X		X		X	X	
44.	ACM or PHOENIX ACTIVE selected (e.g. No, ACM, PHX ACTIVE)	X	X									
45.	Launch or Weapon Release Action (e.g. Normal, Hangfire, SAT, No Motor Fire, etc.)	X	X	X	X	X	X	X	X	X	X	
46.	Mid-Course Guidance Assessment (e.g. Normal, Ballistic, Erratic, etc.)	X	X	X	X	X	X	X	X	X	X	
47.	Miss Distance/Direction/ Source of Data (ft) (IF APPLICABLE) (e.g. 11 ft/6 O'Clock/Visual, Telemetry, etc.)	X	X	X	X	X	X	X	X	X	X	X

AIRBORNE WEAPONS SYSTEM FIRING REPORT

Weapon/Missile

No.	Event Parameters	AIM-120 AMRAAM AIM-54 PHOENIX	AIM-7 SPARROW	AIM-9 SWD	AGM-154A/B/C JSOW	AGM-122A SIDEARM AGM-88 HARM	LGB/GBU	AGM-84 HARPOON	GATOR ROCKEYE (NOTE 4)	AGM-84E-1C SLAM/ AGM-84H-1 SLAM ER	AGM-119B PENGUIN	TALD
48.	Fuzing or Warhead/Flash Warhead Detonation (SAT, UNSAT/Late, UNSAT/Early, etc.)	X	X	X		X	X	X	X	X	X	
49.	Target Damage Assessment (e.g. None, Direct-Hit, Total, TGT Tail, Kill, Partial, etc.)	X	X	X	X	X	X	X	X	X	X	
50.	Missile Assist Team (MAT) On Site During Exercise (YES/NO)	X	X	X		X	X	X	X	X	X	
51.	Mission Abort Reason (IF APPLICABLE) (e.g. Aircraft, AWCS, Range, etc.)	X	X	X	X	X	X	X	X	X	X	
52.	In-Flight WCS or Sensor Checks (Type/Result) (e.g. IT 4/SAT, etc.)	X	X	X		X	X	X	X	X	X	
53.	Post-Flight WCS or Sensor Checks (Type/ Result) (e.g. MITS/SAT, etc.)	X	X	X		X	X	X	X	X	X	
54.	Target Serial Number	X	X	X		X	X	X	X	X	X	
55.	Target Formation (IF APPLICABLE) (e.g. 2000ft in Trail, 500 ft Triangular Pattern, etc.)	X	X	X		X	X	X	X	X	X	
56.	Scenario Number	X	X	X	X	X	X	X	X	X	X	

AIRBORNE WEAPONS SYSTEM FIRING REPORT												
Weapon/Missile												
No.	Event Parameters	AIM-120 AMRAAM AIM-54 PHOENIX	AIM-7 SPARROW	AIM-9 SWD	AGM-154A/B/C JSOW	AGM-122A SIDEARM AGM-88 HARM	LGB/GBU	AGM-84 HARPOON	GATOR ROCKEYE (NOTE 4)	AGM-84E-1C SLAM/ AGM-84H-1 SLAM ER	AGM-119B PENGUIN	TALD
57.	ECM or CM Type/ Parameters (SEE NOTE 2) (e.g. Type/power out, Type/dwell time, Type/pull-off length, Type/corridor size/placement, Type/dispenser rates, Type/bandwidth, etc.)	X	X	X	X	X	X	X	X	X	X	X
58.	F-Pole Range (NMI)	X	X	X								
59.	Missile or Weapon Configuration (TLM<WHD, FLASH-WHD, CLIPPED-WHD, or IN-ERT-WHD)	X	X	X	X	X	X	X	X	X	X	
60.	Missile or Weapon Time of Flight (SEC)	X	X	X	X	X	X	X	X	X	X	X
61.	Designator, Illuminator, or Control Aircraft Identity (IF OTHER THAN SELF, SEE NOTE 3) (IF APPLICABLE) (e.g. Self, Buddy, Ground, etc.)	X	X		X C ONLY		X			X		
62.	Data Link (POD) Serial Number				X C ONLY		X			X	X	X
63.	Launch or Weapon Release Background (e.g. Blue Sky, Sea, Desert, Sun, Blowing Sand, etc.)	X	X	X	X C ONLY	X	X	X	X	X	X	

AIRBORNE WEAPONS SYSTEM FIRING REPORT												
Weapon/Missile												
No.	Event Parameters	AIM-120 AMRAAM AIM-54 PHOENIX	AIM-7 SPARROW	AIM-9 SWD	AGM-154A/B/C JSOW	AGM-122A SIDEARM AGM-88 HARM	LGB/GBU	AGM-84 HARPOON	GATOR ROCKEYE (NOTE 4)	AGM-84E-1C SLAM/ AGM-84H-1 SLAM ER	AGM-119B PENGUIN	TALD
64.	Weather/Visibility (NMI) (e.g. Clear/40 NMI, Overcast/15 NMI Rain/ 12 NMI, etc.)	X	X	X	X	X	X	X	X	X	X	
65.	Fuze Selection/Delay Time (mSEC) (NOTAP- PLICABLE FORHELL- FIRE) (e.g. Instanta- neous/0mSEC, Delay/10 mSEC, etc.)				X C ONLY		X		X			X
66.	ComputerLaunchMode (e.g. Auto/Gen, Bore- sight, Auto CCIP, Manu- al, etc.)				X	X	X	X	X	X	X	
67.	Target Dimensions (FT) (e.g. 100x35x20, 45x21x14, etc.)				X	X	X	X	X	X	X	
68.	EmitterElevation/Place- mentAbove Target (FT) (35 ft/on Mast, 0 ft/on Deck, etc.)					X						
69.	Target Elevation Above Sea Level (ft MSL)				X	X	X		X	X		
70.	LaunchAircraftHeading at Target Acquisition (DEG True) (e.g. 331, 099, etc.)					X	X	X	X	X	X	
71.	LaunchAircraftHeading at Target Lock On (DEG True) (e.g. 276, 032, etc.)					X	X	X	X	X	X	

AIRBORNE WEAPONS SYSTEM FIRING REPORT												
Weapon/Missile												
No.	Event Parameters	AIM-120 AMRAAM AIM-54 PHOENIX	AIM-7 SPARROW	AIM-9 SWD	AGM-154A/B/C JSOW	AGM-122A SIDEARM AGM-88 HARM	LGB/GBU	AGM-84 HARPOON	GATOR ROCKEYE (NOTE 4)	AGM-84E-1C SLAM/ AGM-84H-1 SLAM ER	AGM-119B PENGUIN	TALD
72.	Designator,Illuminator, or Control Aircraft ALT/ Range/Bearing to TGT at Impact (IF OTHER THAN SELF, SEE NOTE 3) (IF APPLICA- BLE) (FT/NMI/DEG) (e.g. 1000/5.1/026, 15500/ 26.9/110, etc.)	X	X		X C ONLY		X			X		
73.	TargetSignalAction/Off Time from WHD Deto- nation (SEC) (e.g. Off Prior to Impact/10.0, Off After Impact/1.0, On, UNK, etc.)					X						X
74.	Preflight WCS or Weap- on System Checks (e.g. SAT, UNSAT, Not Tested, etc.)	X	X	X	X	X	X	X	X	X	X	
75.	TLM Pack or Warhead Used (If WHD indicate if Detonation Observed) (e.g. Flash-WHD/NO, WHD/Yes, etc.)	X	X	X		X	X	X	X	X	X	
76.	Sea State (e.g. 1, 2, 3, 4, 5)	X	X	X		X	X	X	X	X	X	X
77.	Surface Wind Speed/Di- rection (KN/DEG) (15/015 True, etc.)				X	X	X	X	X	X	X	
78.	Surface Barometric Pres- sure/Humidity (mHg/Per- cent) (e.g. 29.001/50, etc.)					X	X	X	X	X	X	

AIRBORNE WEAPONS SYSTEM FIRING REPORT

Weapon/Missile

No.	Event Parameters	AIM-120 AMRAAM AIM-54 PHOENIX	AIM-7 SPARROW	AIM-9 SWD	AGM-154A/B/C JSOW	AGM-122A SIDEARM AGM-88 HARM	LGB/GBU	AGM-84 HARPOON	GATOR ROCKEYE (NOTE 4)	AGM-84E-1C SLAM/ AGM-84H-1 SLAM ER	AGM-119B PENGUIN	TALD
79.	Surface Temperature/Pre- cipitation (DEG) (e.g. 70F/Yes, 27C/No, etc.)				X	X	X	X	X	X	X	
80.	Targeting Means (e.g. Own Radar, ESM, Other (Specify), etc.)					X		X		X	X	
81.	Aircraft True Airspeed/ True Heading at Step- Into-Attack (KN/DEG) (A6)/Data Entry (P3) (e.g. 55/027, etc.)							X		X	X	X
82.	Range/Relative Bearing to Target at Step-Into- Attack (NMI/DEG (A6)/ Data Entry (P3) (e.g. 55/027, etc.)							X		X	X	
83.	Time at Step-Into- Attack (To Nearest Sec- ond) (A6)/Data Entry (P3)							X		X	X	
84.	Range/Relative Bearing to Target at Commit (A6)/ITL (P3) (e.g. 36/014, etc.)							X		X	X	
85.	Time at Commit (To Nearest Second) (A6)/ ITL (P3)							X		X	X	
86.	Weapon Expended (Yes/ No)	X	X	X	X	X	X	X	X	X	X	X

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AIRBORNE WEAPONS SYSTEM FIRING REPORT

Weapon/Missile

No.	Event Parameters	AIM-120 AMRAAM AIM-54 PHOENIX	AIM-7 SPARROW	AIM-9 SWD	AGM-154A/B/C JSOW	AGM-122A SIDEARM AGM-88 HARM	LGB/GBU	AGM-84 HARPOON	GATOR ROCKEYE (NOTE 4)	AGM-84E-1C SLAM/ AGM-84H-1 SLAM ER	AGM-119B PENGUIN	TALD
87.	Crew Experience (e.g. Pilot: CAT I/II/III; NFO or RIO: CAT I/II/III)	X	X	X	X	X	X	X	X	X	X	
88.	Aircrew Performance (SAT, UNSAT)	X	X	X	X	X	X	X	X	X	X	X
89.	Dispersion Observed								X			X
90.	No. of Bombs (Parachutes) Observed (FAE and JSOW Only)								X			
91.	No. of Bursts Observed (FAE and JSOW) (1, 2)								X			
92.	Remarks: Include reasons for aborted firing attempts. Include range delays, control quality, lack of TGT presentation, TGT survivability maneuvers, TGT formations, TGT and missile anomalies (including TLM) or any information requiring resolution in order to improve missile shoot capabilities and communication or weapon control system electro-magnetic or RF interference. Note corrective actions taken if aircraft discrepancy indicated (all firing attempts shall be reported including hang-fires and misfires).	X	X	X	X	X	X	X	X	X	X	X

AIRBORNE WEAPONS SYSTEM FIRING REPORT

Weapon/Missile

No.	Event Parameters	AIM-120 AMRAAM AIM-54 PHOENIX	AIM-7 SPARROW	AIM-9 SWD	AGM-154A/B/C JSOW	AGM-122A SIDEARM AGM-88 HARM	LGB/GBU	AGM-84 HARPOON	GATOR ROCKEYE (NOTE 4)	AGM-84E-1C SLAM/ AGM-84H-1 SLAM ER	AGM-119B PENGUIN	TALD
93.	Comment on adequacy of target for exercise, e.g. radar on FLIR significance, emitter strength, etc. Include data on ballistic tape and release advance/delay used.											
94.	If multiple attempts are reported in this MSG, provide result summary here, by type: e.g. "AIM-7M three attempts/two successes." For purposes of this Item a Success is defined as a missile/TGT intercept that results in a CPA within lethal limits as specified by NAVAIR.	X	X	X	X	X	X	X	X	X	X	X
95.	DMPI Planned (LAT, LONG, ELEV, DATUM)				X							
96.	Source of DMPI coordinates (DIWS, PTW, other systems, and Aircraft system).				X							
97.	DMPI Targeted (LAT, LONG, ELEV, DATUM).				X							
98.	DMPI Changed (NA, Before Takeoff, Enroute).				X							
99.	Range on Bearing (NM, Degree True/MAG) If used.				X							
100	Number of JSOW way points planned (other than ROB).				X							

AIRBORNE WEAPONS SYSTEM FIRING REPORT

Weapon/Missile

No.	Event Parameters	AIM-120 AMRAAM AIM-54 PHOENIX	AIM-7 SPARROW	AIM-9 SWD	AGM-154A/B/C JSOW	AGM-122A SIDEARM AGM-88 HARM	LGB/GBU	AGM-84 HARPOON	GATOR ROCKEYE (NOTE 4)	AGM-84E-1C SLAM/ AGM-84H-1 SLAM ER	AGM-119B PENGUIN	TALD
101	MAX In Range (IR) LAR.				X							
102	MAX In Zone (IZ) LAR.				X							
103	Predicted and Actual Time of Flight.				X							

NOTES

- When Item 11 contains TOW Body, include in Remarks the line length from the tractor target to the TOW Body. The MSG is then SECRET NOFORN.
- When Item 57 is filled with ECM types or parameters, the MSG classification is SECRET NOFORN.
- For either Item 61 or Item 72, when Designator, Illuminator, or Control Aircraft identity is other than SELF the column next to the data for the Launch Platform should be labeled "Designator", "Illuminator", or "Control Aircraft" and all items should be filled in. For certain scenarios this data will make the MSG classification SECRET NOFORN.
- Submit Firing Report for ROCKEYE CONFIGURED with FMU-140A/B Fuze only.
- HELLFIRE AGM-114 or TOW BGM-71 use Missile Firing Data Report (HELLFIRE/TOW), Page G-14 and G-15.
- MAVERICK AGM-65E/F use Missile Firing Data Report (Maverick), Page G-16 and G-17.
- Firing report for HELLFIRE, TOW, MAVERICK Missiles may be submitted via the CNO Web Page URL: <http://143.113.200.54/Redshirt/shirt1.htm>
- EXAMPLE:

MSL A	DESIGNATOR
1. PMRF	SAME
2. VFA-83	VA-75
3. 21 AUG 81	SAME
continue with data for Items 4 through 89	
90. N/A	N/A

MISSILE FIRING REPORT (HELLFIRE/TOW) UNCLASSIFIED WHEN FILLED IN

<p>1. DATE: ____/____/____ (DD/MM/YY)</p> <p>2. POC: _____</p> <p>DSN _____</p> <p>3. GUNNER EXPERIENCE: ____ PREVIOUS MISSILE FIRED</p> <p>4. MISSILE TYPE: [] HELLFIRE [] TOW [] BGM-71 [] AGM-114 B [] AGM-114 C [] BGM-71E [] AGM-114 K [] AGM-114 M</p> <p>5. MISSILE LOCATION: AH-1W H-60 PORT STDB 5 7 8 6 1 2 1 3 4 2 3 4</p> <p>6. MSL S/N: </p> <p>7. MSL LOT #: _____</p> <p>8. LAUNCH A/C: [] AH-1W (MARINE) [] H-60 (NAVY)</p> <p>9. BUNO: _____</p> <p>10. A/C SYSTEM: [] M65 [] NTS [] 1686</p> <p>11. VIDEO TAPE AVAILABLE: [] YES [] NO</p> <p>12. LAUNCHER S/N: _____</p> <p>13. FIRING LOCATION: [] 29 PALMS, CA [] NEW RIVER, NC [] CHINALAKE, CA [] FALLON, NV [] CAMP PENDLETON [] YUMA, AZ [] OTHER _____</p> <p>14. ACQUISITION SENSOR: [] FLIR [] CCD [] DVO [] RADAR</p> <p>V _____ LAUNCH _____ V</p> <p>15. TIME (LOCAL) ____ _</p> <p>16. RANGE TO TGT: METERS </p> <p>17. TRACKING METHOD: [] AUTO [] MANUAL</p> <p>18. A/C ALT. FT AGL FT MS </p>	<p>19. A/C SPEED: ____ KTS</p> <p>20. A/C PITCH: ____ DEG</p> <p>21. A/C ROLL: ____ DEG [] RT DN [] LT DN</p> <p>22. A/C OFFSET ANGLE: ____ DEG [] R-LOS [] L-LOS</p> <p>23. MISSILE LAUNCH: [] NORMAL [] MISFIRE [] HANGFIRE [] ABORT</p> <p>V _____ HELLFIRE ONLY _____ V</p> <p>24. DESIGNATOR: [] AUTONOMOUS [] BUDDY [] OTHER _____ [] MULE</p> <p>25. REMOTE DESGNTR OFFSET: ____ DEG</p> <p>26. DESIGNATOR RANGE MILES</p> <p>27. [] REMOTE CODE CONFIRMED</p> <p>28. FIRING MODE: [] LOBL [] LOAL LOW [] LOAL [] LOAL HIGH</p> <p>29. LAUNCH TYPE: [] MANUAL [] RAPID [] RIPPLE</p> <p>30. LOAL DELAY TIME ____ SEC.</p> <p>31. BACKSCATTER AVOIDANCE TECHNIQUES EMPLOYED: [] YES [] NO</p> <p>32. MISSILE CCM: [] ON [] OFF</p> <p>V _____ TARGET DATA _____ V</p> <p>33. TARGET TYPE: [] TANK [] BARGE [] TIRE STACK [] PLYWOOD [] METAL HULK [] _____</p> <p>34. TARGET SPEED: ____ MPH</p> <p>35. TARGET PROFILE SIZE: [] 8' X 8' [] 8' X 16' [] 10' X 20' [] k [] 4' X 8'</p> <p>36. TARGET CONDITION: [] SOLID [] PERFORATED</p>	<p>37. TARGET ALT (MSL): ____ FT</p> <p>38. TARGET BACKGROUND: [] WATER [] DESERT FLOOR [] SKY OTHER [] _____</p> <p>V _____ ENVIRONMENT _____ V</p> <p>39. OAT: ____ DEG [] F [] C</p> <p>40. LOCAL ALTIMETER: IN</p> <p>41. WIND VELOCITY IN MPH: [] 0 5 [] 10 15 [] 20 30 [] 5 10 [] 15 20 [] >30</p> <p>42. WIND FROM A/C'S: ____ O'CLOCK</p> <p>43. WEATHER [] CLEAR [] LIGHT RAIN [] FOG/MIST [] HEAVY RAIN [] OVERCAST [] ICE/SLEET CEILING ____ FT [] SNOW</p> <p>44. VISIBILITY RANGE: METERS</p> <p>45. VISIBILITY: [] UNRESTRICTED [] SAND/DUST [] RAIN [] SMOKE [] FOG</p> <p>46. OBSCURANTS SOURCE: [] ROTORWASH [] WIND [] WEATHER [] FIRE [] EXPLOSION [] MISSILE</p> <p>47. ILLUMINATION: [] MOONLESS NIGHT [] MOONED NIGHT [] TWILIGHT [] DAY</p> <p>48. SEA STATE: (1 to 12) _____ [] N/A</p> <p>V _____ POST LAUNCH _____ V</p> <p>49. TOW CAPTURE [] YES [] NO [] N/A</p> <p>50. HOW MANY TIMES DID TOW CROSS THE TSU LOS? _____ [] N/A</p> <p>51. MISSILE IMPACT: [] HIT TARGET [] MISSED TARGET [] LT [] RT [] LONG [] SHORT METERS FROM TARGET </p>	<p>52. IMPACTED METERS FROM AIRCRAFT.</p> <p>53. WARHEAD DETONATION: [] YES [] NO</p> <p>54. POST LAUNCH BIT/TESTS:</p> <p>BIT () PASS () FAIL</p> <p>FLIR () PASS () FAIL</p> <p>BORESIGHT () PASS () FAIL</p> <p>TEST SET () PASS () FAIL</p> <p>H F SYSTEM:</p> <p>() PASS () FAIL</p> <p>FAIL MODE:</p> <p>() LAUNCHER</p> <p>() R H E</p> <p>() MRTU</p> <p>() PITCH I F</p> <p>() THCDP</p> <p>TOW SYSTEM:</p> <p>() PASS () FAIL</p> <p>FAIL MODE:</p> <p>() TSU</p> <p>() SCA</p> <p>() MCA</p> <p>() EPS</p> <p>() N/A</p>
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G-15

MISSILE FIRING REPORT (HELLFIRE/TOW)**(Con't)**

55. PROBABLE CAUSE IF MISSED:

- ☐ UNKNOWN
☐ MISSILE
☐ LAUNCH SYSTEM MALF.
☐ SIGHTING SYSTEM MALF.
☐ OTHER EXPLAINED IN REMAKRS

V _____ HELLFIRE ONLY _____ V

- ☐ DESIGNATOR EQUIPMENT FAILURE
☐ DESIGNATOR PERSONNEL ERROR
☐ CODE MISMATCH
☐ LASER OVERSPILL
☐ SPOT JITTER
☐ BACKSCATTER

V _____ TOW ONLY _____ V

- ☐ FAILED TO CAPTURE
☐ PYLON ALIGNMENT
☐ INADEQUATE SHC CONTROL
☐ COMMAND WIRE SNAG
☐ MCA PROGRAMMER RESET
☐ MSL XENON BEACON
☐ MSL FLIGHT MOTOR

MAIL TO

COMMANDER, U.S. ARMY AVIATION AND MISSILE COMMAND,
ATTN: AMSAM-RD-SE-RA, REDSTONE ARSENAL, AL 35898-5290

COPY TO

COMMANDER, NAVAL AIR WARFARE CENTER WEAPONS DIVISION, ATTN CODE
311000E,(Bob Moore), 575 I Avenue Suite 1, POINT MUGU, CA 93042-5049

COPY TO

DIRECTOR, Marine Corps Programs (Code 40911), NAVSURFWARCENDIV Crane, IN
DET FALLBROOK, 700 AMMUNITION ROAD, FALLBROOK, CA 92028-3137

COPY TO: CHAIN OF COMMAND AS DEEMED NECESSARY

56. REMARKS: INCLUDE ALL RELEVANT INFORMATION
EXPLAINING MISSILE FAILURE OR ABNORMAL FLIGHT
TRAJECTORY. BE AS COMPLETE AS POSSIBLE.

*****UNCLASSIFIED*****

MISSILE FIRING REPORT (MAVERICK) UNCLASSIFIED WHEN FILLED IN

COMMAND 1. Date: ____ / ____ / ____ (mm/dd/yyyy) 2. Gunnery Range <input type="checkbox"/> 29 Palms, CA. <input type="checkbox"/> China Lake CA <input type="checkbox"/> New River, NC <input type="checkbox"/> Fallon, NV <input type="checkbox"/> Yuma, AZ <input type="checkbox"/> Camp Pendelton, CA 3. Video available? <input type="checkbox"/> yes <input type="checkbox"/> no Point of Contact 4. Name: _____ 5. Activity: _____ 6. DSN & Commercial: _____ _____ 7. E-Mail: _____ Aircrew 8. Aircrew experience: ____ # msls fired 9. Aircraft Type: <input type="checkbox"/> F/A-18 <input type="checkbox"/> S-3B <input type="checkbox"/> P-3C <input type="checkbox"/> AV-8B <input type="checkbox"/> A-6E SWIP <input type="checkbox"/> OTHER: _____ 10. Software Block: <input type="checkbox"/> 92A <input type="checkbox"/> OMNIBUS 6+C <input type="checkbox"/> 09C <input type="checkbox"/> OMNIBUS 7 <input type="checkbox"/> OMNIBUS R3 <input type="checkbox"/> E/A-250.02/.03 <input type="checkbox"/> OTHER: _____	11. Acquisition Sensor: <input type="checkbox"/> Visual <input type="checkbox"/> Pave Penny <input type="checkbox"/> LANTIRN <input type="checkbox"/> Radar <input type="checkbox"/> other: _____ 12. BUNO: _____ MISSILE 13. AGM-65 ____: <input type="checkbox"/> E-laser <input type="checkbox"/> F-IR 14. Station # (1-20) : _____ 15. Serial # : _____ 16. Lot # : _____ DESIGNATOR 17. Type: <input type="checkbox"/> LTD <input type="checkbox"/> MULE <input type="checkbox"/> G/VLLD <input type="checkbox"/> OTHER: _____ 18. Range (miles) : _____ 19. Altitude (ft AGL): _____ TARGET 20. Type: <input type="checkbox"/> Tank <input type="checkbox"/> Barge <input type="checkbox"/> Plywood <input type="checkbox"/> Tire Stack <input type="checkbox"/> Metal Hulk <input type="checkbox"/> other: _____ 21. Size (L x W ft) : _____ 22. Speed (kts) : _____ 23. Altitude (meters) : _____	24. Condition: <input type="checkbox"/> Solid <input type="checkbox"/> Perforated <input type="checkbox"/> other: _____ ENVIRONMENT 25. Air Temperature: _____ [] C [] F 26. Wind Velocity (mph): <input type="checkbox"/> 0-5 <input type="checkbox"/> 6-10 <input type="checkbox"/> 11-15 <input type="checkbox"/> 16-20 <input type="checkbox"/> 21-25 <input type="checkbox"/> 26-30 <input type="checkbox"/> >30 27. Weather: <input type="checkbox"/> Clear <input type="checkbox"/> Fog/Mist <input type="checkbox"/> Overcast <input type="checkbox"/> Light Rain <input type="checkbox"/> Heavy Rain <input type="checkbox"/> Ice/Sleet <input type="checkbox"/> Snow <input type="checkbox"/> other: _____ 28. Illumination: <input type="checkbox"/> Full Moon <input type="checkbox"/> New Moon <input type="checkbox"/> Twilight <input type="checkbox"/> Daylight <input type="checkbox"/> Dawn <input type="checkbox"/> Sunset <input type="checkbox"/> Stars <input type="checkbox"/> Cloudy <input type="checkbox"/> Overcast 29. Visibility (NM): _____ 30. Obscurants: <input type="checkbox"/> Clear <input type="checkbox"/> Sand/Dust <input type="checkbox"/> Smoke <input type="checkbox"/> Weather <input type="checkbox"/> Explosion <input type="checkbox"/> Missile <input type="checkbox"/> other: _____ 31. Humidity (%) : _____ 32. Cloud Ceiling (ft) : _____ LAUNCH 33. Tracking Method : <input type="checkbox"/> Manual <input type="checkbox"/> Auto	34. Contrast Selection: <input type="checkbox"/> BOW <input type="checkbox"/> WOB 35. FOV Selection: <input type="checkbox"/> Wide <input type="checkbox"/> Narrow 36. Fuze Time Delay : <input type="checkbox"/> Instant (1.2ms) <input type="checkbox"/> Medium (14ms) <input type="checkbox"/> Long (30 ms) 37. Designator Offset (deg) : _____ AIRCRAFT 38. Altitude (ft AGL) : _____ 39. Dive Angle (deg) : _____ 40. Speed (kts) : _____ 41. Pitch (deg) : _____ 42. Roll (deg) : _____ 43. Range to TGT (meters) : _____ IMPACT 44. Result : <input type="checkbox"/> Direct Hit <input type="checkbox"/> Miss Left <input type="checkbox"/> Miss Right <input type="checkbox"/> Long <input type="checkbox"/> Short If Miss 45. Detonation Observed : [] Yes [] No 46. Distance from TGT (meters) : _____
---	---	---	--

MISSILE FIRING REPORT (MAVERICK) UNCLASSIFIED WHEN FILLED IN

REMARKS (Complete the following only for abnormal operations)

47. Describe the maneuver(s) that missile performed from launch to impact: _____

48. Was the rocket motor burning during the maneuver? ☐ Yes ☐ No

49. Was the missile rolling in flight? ☐ Yes ☐ No

50. Which Direction? ☐ Clockwise ☐ Counter Clockwise

51. Did the missile perform a "break turn?" ☐ Yes ☐ No

52. Direction? _____ O'Clock

53. Did the missile detonate on impact? ☐ Yes ☐ No

54. What color was the smoke? _____

55. Was the aircraft borsighted? ☐ Yes ☐ No

56. How many minutes prior to launch was power applied to the missile?

57. How many minutes was video present prior to launch? _____

58. Did the VTR tape indicate a good lockon to valid target? ☐ Yes ☐ No

59. Pointing cross steady? ☐ Yes ☐ No

60. Additional remarks: _____

MAIL TO:

Commander, Naval Air Warfare Center Weapons Division,
Attn: Code 311000E, (Bob Moore) 575 I Avenue, Suite 1
Point Mugu, CA 93042-5049

COPY TO:

Director, Marine Corps Programs (Code 40911), NAVSURFWARCENDIV Crane, IN
Det Fallbrook, 700 Ammunition Road, Fallbrook, CA 92028-3137

COPY TO: CHAIN OF COMMAND AS DEEMED NECESSARY

APPENDIX H

Instructions for Completing Forms and Records

APPENDIX H**Instructions for Completing Forms and Records****Table of Contents**

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1. NOMENCLATURE		2. EQUIPMENT MODEL/PART NO.		3. SERIAL NO.	
4. DATE	5. INSPECTOR (Signature)	6. SUPERVISOR (Signature)	7. DATE	8. INSPECTOR (Signature)	9. SUPERVISOR (Signature)

OPNAV 4790/52 (Rev 3-83)

S/N 0107-LF-770-5501

SE PREOPERATIONAL RECORD

10. DATE	11. INSPECTOR (Signature)	12. SUPERVISOR (Signature)	13. DATE	14. INSPECTOR (Signature)	15. SUPERVISOR (Signature)

OPNAV 4790/52 (Rev 3-83) (BACK)

Sample Support Equipment Preoperational Record (OPNAV 4790/52)

[illegible]

OPNAV 4790/51 (Rev. 8-88) REPLACES OPNAV 4790/50 (Rev. 1-84) AND OPNAV 4790/51 (Rev. 1-84) WHICH ARE OBSOLETE; STOCKS WILL BE DESTROYED S/N 0107-LF-047-9255

SAMPLE

HI-4

SAMPLE

SUPPORT EQUIPMENT TRANSACTION REPORT											
1. PROGRAM INDICATOR <input type="checkbox"/> IMRL <input type="checkbox"/> TOL <input type="checkbox"/> LAMS <input type="checkbox"/> CAL STD <input type="checkbox"/> LOCAL						2. JULIAN DT		3. TR SER NO		4.	
5. REPORTING ACTIVITY						6. RECEIVED FROM/TRANSFERRED TO ACTIVITY					
5a. AAI		5b. ACTIVITY NAME (Short Title)				6a. AAI		6b. ACTIVITY NAME (Short Title)			
7. QTY		8. TYPE TRANSACTION <input type="checkbox"/> GAIN <input type="checkbox"/> TRANSFER <input type="checkbox"/> SURVEY				9. T/C		10. TOT O/H		11. FSCM	
12. SER NO						13. PART NUM-BER		14. NSN		15.	
16. NOMENCLATURE						17. TRANSPORTATION CONTROL NO					
18. ITEM NO		19. RWK CNTRL		20. TEC		21. QTY AUTH		22. LAST TR NO		23. PRINT DT	
24.		25. RE-IDENTIFICATION DATA		25a. FSCM		25b. RE-IDENTIFIED PART NUMBER				25c. TOT O/H	
26. SUBCUSTODY		26a. TYPE		26b. <input type="checkbox"/> ISSUE <input type="checkbox"/> CORRECTION		26c. CAL/PM/RWK ACT		26d. CAL/PM/RWK DUE		26e. QTY	
27. ISSUE		27a. DATE		27b. TIME		27c. ORG		27d. W/C		27e. STA-TUS	
27f. RECEIVED BY (Signature, Rank/Rate)		28. RE-TURN		28a. DATE		28b. TIME		28c. ORG		28d. W/C	
28e. STA-TUS		28f. RECEIVED BY (Signature, Rank/Rate)									
29. AUTHORITY/COMMENTS/LOCAL USE											

Support Equipment Transaction Report (OPNAV 4790/64)

Block 1 PROGRAM INDICATOR	-- Enter the type program allowing document to which the submittal applies, such as Individual Material Readiness List (IMRL), Tailored Outfitting List (TOL), etc. Place an "X" in the appropriate box.
Block 2 JULIAN DATE	-- Enter the Julian date the transaction report was originated.
Block 3 TRANSACTION REPORT SERIAL NO.	-- Enter the transaction report (TR) serial number consisting of a four digit sequential number.
Block 4	-- Not used.
Block 5 REPORTING ACTIVITY	
Block 5a AAI	-- Enter the Aircraft Maintenance Material Readiness list (AMMRL) activity identifier code of the activity submitting the report.
Block 5b ACTIVITY NAME (Short Title)	-- Enter the noun name of the activity identified in Block 5a.
Block 6 RECEIVED FROM/TRANSFERRED TO ACTIVITY	
Block 6a AAI	-- Enter the AMMRL activity identifier code of the activity item being reported is received from or transferred to.
Block 6b ACTIVITY NAME (Short Title)	-- Enter the noun name of the activity identified in Block 6a.
Block 7 QTY	-- Enter the quantity of items being reported as a gain/(transfer/survey or identification by this transaction report.
Block 8 TYPE TRANSACTION	-- Indicate the reason for transaction report submittal. Place an "X" in the appropriate box.
Block 9 T/C	-- Enter the transaction code identifying the exact nature of the transaction being reported. See NAVAIRINST 13650.1B or the appropriate Support Equipment Controlling Authority (SECA) instruction to ensure use of the correct code.
Block 10 TOT/OH	-- Enter the quantity remaining on hand after the adjustment of the quantity reported in Block 7.
Block 11 FSCM	-- Enter the manufacturer's code for the item being reported.
Block 12 SER NO	-- Enter the serial number of the item being reported.
Block 13 PART NUMBER	-- Enter the part number of the item being reported or old part number of a reidentified item.
Block 14 NSN	-- Enter the national stock number of the item being reported.
Block 15	-- Not used.

Block 16 NOMENCLATURE	-- Enter the noun name of the item being reported.
Block 17 TRANSPORTATION CONTROL NO.	-- Enter the Transportation Control Number (TCN) (used when an item is shipped to rework).
Block 18 ITEM NO	-- Enter the allowancing document line item number of item being reported (IMRL, TOL, etc).
Block 19 RWK CNTRL	-- Enter the rework control number assigned by the Support Equipment Resources Management Information System (SERMIS).
Block 20 TEC	-- Enter the Type Equipment Code (TEC).
Block 21 QTY AUTH	-- Enter the authorized allowance of the item being reported (from IMRL or TOL).
Block 22 LAST TRANSACTION REPORT SERIAL NO.	-- Enter the last transaction report serial number for the item being reported.
Block 23 PRINT DT	-- Enter the current allowancing document print date (YYMMDD).
Block 24	-- Not used.
Block 25 RE-IDENTIFICATION DATA	
Block 25a FSCM	-- Enter the manufacturer's code for the item being re-identified.
Block 25b RE-IDENTIFICATION NUMBER	-- Enter the new part number for the re-identification item.
Block 25c TOT O/H	-- Enter the total quantity on hand of the re-identified part number after re-identification.
Block 26 SUBCUSTODY	
Block 26a TYPE	-- Enter the code ("R" for reportable item on the IMRL or TOL, "N" for nonreportable item on IMRL or TOL, or "X" for item not on IMRL or TOL.
Block 26b ISSUE/CORRECTION	-- Place an "X" in the appropriate box.
Block 26c CAL/PM/RWK ACT	-- Enter the noun name of the activity performing the calibration, preventive maintenance, or rework.
Block 26d CAL/PM/RWK DUE	-- Enter the Julian date due at the activity performing calibration, preventive maintenance, or rework.
Block 26e QTY	-- Enter the quantity of items subcustodied.
Block 27 ISSUE	
Block 27a DATE	-- Enter the Julian date of issue.
Block 27b TIME	-- Enter the military time at which the transaction is complete.

Block 27c ORG	-- Enter the organization code of the individual identified in Block of 27f.
Block 27d W/C	-- Enter the work center of the individual identified in Block 27f.
Block 27e STATUS	-- Enter the status code showing the condition of the item being reported.
Block 27f RECEIVED BY	-- Ensure that the signature and rate of the individual accepting the item being issued is entered.
Block 28 RETURN	
Block 28a DATE	-- Enter the Julian date of return.
Block 28b TIME	-- Enter the military time at which the transaction is complete.
Block 28c ORG	-- Enter the organization code of the individual identified in Block 28f.
Block 28d W/C	-- Enter the work center of the individual identified in Block 28f.
Block 28e STATUS	-- Enter the code showing the condition of the item being reported.
Block 28f RECEIVED BY	-- Ensure that the signature and rate of the individual accepting the item being returned is entered.
Block 29 AUTHORITY/ COMMENTS/LOCAL USE	-- For Authority; Command directive authorizing transaction (SERMIS generated number, reference for letter or memo, DTG of msg, etc.). For comments/local use; Comments explaining the transaction or information for use with the Visual Information Display System (VIDS) boards.

No. SWP 4826						Copy 1						5 PART FORM USE BALL-POINT PEN PRESS HARD						ENTRIES REQUIRED SIGNATURE NONE LOGS REC <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>													
WORK CENTER REGISTER, CONTROL AND PROCESSING COPY VIDS/MAF OPN/A/ 4790/60 (REV. 5-88) S/N 0107-LF-002-5900																															
LOCAL USE				ACCUMULATED WORK HOURS								ACCUMULATED AWM HOURS																			
				NAME/SHIFT		TOOL BOX		DATE		MAN HOURS		ELAPSED M/T		DATE		TIME		REASON		HOURS											
REFERENCE																															
(H-Z) FAILED/REQUIRED MATERIAL																															
79 INDEX		08 F/P		09 AWP		10 A/T		11 MAL		14 MFGR		19 PART NUMBER		34 REF SYMBOL		41 QTY		43 PROJ		45 DATE ORD		49 REQ NO		53 DATE REC							
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																												
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																												
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																												
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	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																												
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																												
A22 WORK UNIT CODE		A29 ACTION ORG		A32 TRANS		A34 MAINT/L		A35 ACT TAKEN		A36 MAL CODE		A39 ITEMS/P		A41 MAN HOURS		A45 ELAPSED M/T		F08 INTERIM		F09 CODE		P11 BASIC NO.		F15 RV		F16 AM		F17 PART		F19 KIT	
A48 TYPE EQUIP		A52 BU/SER NUMBER		A58 DISCO		A59 T/M		A60 POSIT		A62 FID		A65 SAFETY/EI SER		A69 METER		SE MFGR		A74		INVENTORY F22 PERM LIMIT CODE		F21						F28			
REPAIR CYCLE DATE TIME EOC				REMOVED/OLD ITEM E09 MFGR E13 SERIAL NUMBER								INSTALLED/NEW ITEM G08 MFGR G13 SERIAL NUMBER																			
RECEIVED		B08 B12 B16		SAMPLE																											
IN WORK		B19 B23 B27		E23 PART NUM-BER				E38 DATE REMOVED				G23 PART NUMBER																			
COMPLETED		B30 B34		E42 TIME/CYCLES		E47 TIME/CYCLES		E52 TIME/CYCLES		G38 TIME/CYCLES		G43 TIME/CYCLES		G48 TIME/CYCLES																	
AWAITING MAINTENANCE B38 B39 B43 B44 B48 B49				DISCREPANCY																											
HOUR S		HOUR S		HOUR S																											
MAINTENANCE/SUPPLY RECORD JOB STATUS DATE TIME EOC				CORRECTIVE AC-TION																											
B53 B54 B58 B62																															
B65 B66 B70 B74																															
C08 C09 C13 C17																															
C20 C21 C25 C29																															
C32 C33 C37 C41																															
C44 C45 C49 C53																															
C56 C57 C61 C65																															
D08 D09 D13 D17																															
JOB CONTROL NUMBER A08 DAY A11 SUP A14 SER A17 WORK CENTER				CORRECTED BY INSPECTED BY SUPERVISOR MAINT CONTROL																											
UP DOWN				MODEX PRI				TURN-IN DOCUMENT				SYSTEM/REASON				MCN															

Visual Information Display System/Maintenance Action Form (OPNAV 4790/60)

This section describes the data blocks used in documenting maintenance actions on the Visual Information Display System/Maintenance Action Form (VIDS/MAF). It also contains an explanation of the document numbering system. The codes used to describe the data on this form are contained in the applicable work unit code manual.

- Entries Required Signature -- This section is provided to ensure that historical records are updated in a timely and orderly manner. Required actions will be accomplished prior to forwarding the VIDS/MAF to data services for data entry. Maintenance control and logs and records personnel will screen all VIDS/MAFs, check appropriate blocks, and enter their name and rate in the signature portion of the Entries Required Block to certify that no entries are required or all applicable logs and records have had appropriate entries made.
- Local Use Block -- This block may be used as desired.
- Reference Block -- Enter the supply reference to aid the material control division in requisitioning the failed or required material.
- Accumulated Work Hours Block -- See below.
- Name/Shift -- Enter the name and shift of the personnel performing the work.
- Tool Box -- This box is used to verify the tool container inventory. Upon return to the work center, a sight inventory of the tool container will be conducted by the work center supervisor or collateral duty inspector and initials placed to the right of the tool container number. When more than one tool container is used, the worker having the tool container on the job will place the number to the right of their name with initials of the person conducting the sight inventory to the right of the number.
- Date -- Enter the Julian date on which the action takes place.
- Man-hours -- Enter the number of man-hours that were expended to correct the discrepancy (in hours and tenths).
- Elapsed Maintenance Time (EMT) -- Enter the number of clock hours involved in making the repair (in hours and tenths). Elapsed maintenance time does not include the clock hours and tenths for cure time, charging time, or leak test when they are being conducted by maintenance personnel actually monitoring the work. Although elapsed maintenance time is directly related to job man-hours, it is not to be confused with total man-hours required to complete a job. For example, if three persons worked together for 2.5 hours to make a repair, the total man-hours would be 7.5 and elapsed maintenance time would be 2.5 hours.
- Accumulated Awaiting Maintenance (AWM) -- This block shall be used to record AWM hours accumulated during the Subsystem Capability and Impact Reporting (SCIR) related time of the discrepancy. This block is best used by recording the beginning date and time of the AWM period with the proper AWM reason code. At the end of the AWM period, calculate AWM hours and enter in the hours section of this block.
- (H-Z) Failed/Required Material Block -- This section will be used to document a failed part without an Awaiting Parts (AWP) situation, a failed part and an AWP situation occurring simultaneously, an AWP situation without a failed part, or AWP situation. A failed part and an AWP situation occurring simultaneously and AWP without a failed part will only be documented at intermediate level maintenance activities. The supply request will only have an index letter in Block 79.

- Block 79 Index -- Enter letters H-Z. These letters represent a specific record type to be extracted from the VIDS/MAF by the data services facility for failed parts, AWP, and engine identification reporting. Index letters H-Z shall be assigned to Block 79 in alphabetical order. This allows the 19 most significant failed parts to be reported against a specific maintenance action. For example, assignment of index H in Block 79 indicates the first failed part record, Z indicates the last and 19th failed parts record against the maintenance action. The purpose of Block 79 is to flag engineering data items only, not supply usage data. Therefore, only significant dialed parts will be annotated with H-Z in this block, such as those items which are known or suspected to have contributed to the discrepancy reported in the discrepancy block of the VIDS/MAF.
- Block 08 FP (Failed Parts) -- Enter an "X" to denote a failed part if the failed material or parts replaced during the repair are piece parts that have failed in a major component. Common hardware, nuts, screws, safety wires, seals, gaskets, washers, fittings, etc., that are routinely replaced during a maintenance action will be documented only if their failure is known or suspected to have contributed to the discrepancy. Data blocks 79 through 41 must be documented to indicate failed parts information.

NOTE

Pre-expended Bin Items. Those exception items, common hardware, nuts, bolts, screws, safety wires, seals, gaskets, washers, fittings, etc., that are routinely replaced during a maintenance action that DO NOT contribute to the discrepancy will be listed in Blocks 14 through 53 for material ordering purposes only. Data blocks 79, 08, 09, 10, and 11 will be left blank. Do not document items available in the pre-expended bin (only those items that are not in stock for material ordering purposes) unless pre-expended bin items caused the failure or were suspected of contributing to the discrepancy.

- Block 09 AWP (Awaiting Parts) -- This block is used at intermediate level maintenance only. Immediately upon receipt of notification that the repair part(s) is not available on the ship or station, the work center supervisor will assure an "X" is entered if the failed or required material is causing an AWP status of the repairable item identified in the work unit code Block A22. Only those items that caused the AWP status will be marked "X." In all cases, even if notification of nonavailability of repair parts is not received, the AWP component is to be delivered to the AWP holding area within 24 hours from the time the need for a repair part was discovered by the work center.
- Block 10 A/T (Action Taken Code) -- Enter the one-character alpha or numeric code which describes the action taken against the removed module, subassemblies, or significant failed parts required. For engine installation, enter "O" for installed, "P" for uninstalled, or "S" for removal and reinstallation.
- Block 11 MAL (Malfunction Description Code) -- Enter the code that best describes the malfunction occurring with the removed subassembly. For engine identification, enter "000."
- Block 14 MFGR (Manufacturer's Code) -- Enter the manufacturer's code of failed part of required material. For engine identification, enter the engine type equipment code followed by the numeric digit indicating the engine position.
- Block 19 Part Number -- Enter the manufacturer's part number of the failed or required material. For engine identification, enter the engine time (prefixed with an "E"). Use time since overhaul if known, otherwise use time since new (whole hours only).
- Block 34 REF SYMBOL (Reference Symbol) -- This block is used only at intermediate level maintenance. Enter the alpha or numeric code which identifies a piece part as distinct from other items of the same part number in a single subassembly or circuit (for example, of four of the same diodes within a circuit, each has the same part number but a different reference symbol). They are found in the Illustrated Parts Breakdown for the weapon system.

Block 41 QTY (Quantity)	-- Enter the quantity of failed or required material. For engine identification, enter "O."
PROJ (Project)	-- Enter project code as applicable.
Block 43 PRI (Priority)	-- Enter the military standard requisitioning and issue procedures priority assigned to the material requisition.
Block 45 DATE ORD (Date Ordered)	-- Enter the Julian date material was requisitioned.
Block 49 REQ NO (Requisition Number)	-- Enter the military standard requisitioning and issue procedures requisition number of the material required to complete the maintenance action.
Block 53 DATE REC (Date Received)	-- Enter the Julian date that the requisitioned material is received.
Block A22 WORK UNIT CODE	-- Enter the work unit code that identifies the system, subsystem, or component on which work is being performed. In cases where removed repairable components do not have a work unit code assigned, use the five- or seven-character Not Otherwise Coded (NOC) code provided by the system or component. A consumable item replaced on a VIDS/MAF should reflect the system or next higher assembly code.

NOTE

Support action codes 030 (inspection) and 049 (preservation/depreservation) are used on the VIDS/MAF as the work unit code for conditional, acceptance and transfer, and preservation or depreservation.

Block A29 ACTION ORG (Action Organi- zation)	-- Enter the organization code of the organization accomplishing the work. Organization codes are listed in Naval Aviation Maintenance Support Office (NAMSOC) 4790A7065-01 report.
Block A32 TRANS (Trans- action Code)	-- Enter the two-character numeric transaction code used to identify the type of data being reported.
Block A34 MAINT/L (Maintenance Level)	-- Enter the level of maintenance (1 thru 3) which is performed (not the level assigned to the activity).
Block A35 ACT TAKEN (Action Taken)	-- Enter the one-character alpha or numeric code that describes the action that has been taken. This code describes what action has been performed on the item identified by the work unit code. Action taken code "A" (discrepancy checked, no repair required) is used only in those cases where an inspection or operational check has been performed and the reported trouble cannot be duplicated or does not exist. In such cases, use the malfunction description code "799" (no defect). Adjustments made to peak a system which is within tolerances may use this code with the appropriate malfunction code. For example, A-127, A-281, A-282. A consumable item replaced on a VIDS/MAF should reflect the system or next higher assembly code only in Block A22 (work unit code) and action taken code "B" or "C" in Block A35. Action taken code "R" should be used in Block 10 (H-Z Failed and Required Material) for parts replaced.

NOTE

The technical directive status code is a single-character alpha code used to indicate the status of compliance with a technical directive. This code applies to Block A35 (action taken) of the VIDS/MAF when reporting technical directive status.

- | | |
|---|--|
| Block A36 MAL
CODE (Malfunction Description Code) | -- Enter the three-character alpha or numeric code used to describe the malfunction which caused the maintenance action on the item described by the work unit code. These codes are divided into three logical groups as follows to assist personnel in finding the most applicable code. |
| Conditional (no fault) Group | -- These codes are used when a nondefective item is removed or when the defect or malfunction is not the fault of the item in question. |
| Reason for Removal Group | -- These codes are used to generally describe trouble symptoms or apparent defects prompting removal of malfunctioning items for repair. |
| Reason for Failure Group | -- These codes are used to generally describe underlying defects or basic failure reasons determined during repair of items exhibiting trouble symptoms. |
| Block A39
ITEMS/P (Items Processed) | -- Enter the number of times that an action, indicated by an action taken code, is applied to the item identified by the work unit code recorded on a VIDS/MAF. For example, since the fuel nozzle of a jet engine has a work unit code, replacement of five fuel nozzles would be documented as five items processed. In contrast, replacement of several transistors in an electronic assembly would be documented as one item processed, with the work unit code identifying the electronic assembly being repaired and the action taken code indicating repair. VIDS/MAF submitted for closeouts by work centers at the end of or during a reporting period will indicate "0" items processed. The Items Processed Block is limited to two characters. If the count exceeds 99, an additional form must be prepared and submitted. |
| Block A41 MAN
HOURS | -- Entries in the man-hours block represent all man-hours expended by assigned personnel to complete the work described on the source document. Hours and tenths worked, multiplied by the number of men working, equals total man-hours. Entry in the man-hours block does not include labor hours for any work center other than the one submitting the document. For example, if two work centers jointly correct a discrepancy on the same equipment, workers from each work center submit a source document with that particular work center's labor hours in the man-hours block. |
| Block A45
ELAPSED M/T
(Elapsed Maintenance Time) | -- Enter the number of clock hours involved in making the repair (in hours and tenths). Elapsed maintenance time does not include the clock hours and tenths for cure time, charging time, or leak test when they are being conducted without maintenance personnel actually monitoring the work. Although the elapsed maintenance time is directly related to job man-hours, it is not to be confused with total man-hours required to complete a job. For example, if three persons worked together for 2.5 hours to make a repair, the total man-hours (Block A41) would be 7.5 hours and the elapsed maintenance time would be 2.5 hours. |
| TECHNICAL
DIRECTIVE
IDENTIFICATION (Blocks F08 through F19) | -- Enter the 12- or 13-character code that identify the specific technical directive incorporated or being incorporated in the type equipment identified in Block A48. This block is divided into seven sections and the data will be entered in each section as follows: |
| Block F08
INTERIM | -- Enter an "X" to indicate an interim technical directive; otherwise leave blank. |

Block F09 CODE	-- Enter the two-character numeric code that denotes the type of directive being incorporated.
Block F11 BASIC NO.	-- Enter the four-numeric characters identifying the basic technical directive, preceded by a zero(s) to complete the field.
Block F15 RV (Revision)	-- Enter the one-alpha character that denotes the specific revision of the basic technical directive. Leave blank if not applicable.
Block F16 AM (Amendment)	-- Enter the one-numeric amendment number of the basic technical directive. Leave blank if not applicable.
Block F17 PART	-- Enter the two-character numeric part number listed in the technical directive. Leave blank if not applicable.
Block F19 KIT	-- Enter the two-character alpha or numeric number of the specific kit incorporated. If no kit is required, enter "00" in this section.
Block A48 TYPE EQUIP (Equipment Code)	-- Enter the type equipment code that describes the end item on which work is being performed. Specific TECs are listed in NAMS0 4790.A7210-03 report.
Block A52 BU/ SER NUMBER (Bureau/Serial Number)	-- Enter the bureau or serial number of the equipment or end item on which work is being performed. If more than six digits, enter the last six. This block must not be blank. Enter "0" in this block when using the VIDS/MAF to document work on groups of like items; for example, jacks, stands, common aeronautical equipment, or items not identified by bureau or serial number. In cases of on-equipment work at the organizational level for personal survival equipment, enter the first letter of the aircrewman's first and last name and the last four digits of the social security number.
Block A58 DISCO (When Discovered Code)	-- The when discovered code is a single alpha character that identifies when the need for maintenance was discovered. These codes are applicable to the VIDS/ MAF only. The three sets of when discovered codes that cover the equipment categories follow: (1) aircraft and engines, (2) support equipment, precision measuring equipment, and expeditionary airfield, and (3) missiles and missile targets.
Block A59 T/M (Type Maintenance Code)	-- Enter the one-character alpha or numeric code used to describe the type of work being accomplished; for example, scheduled, unscheduled, supply support.
Block A60 POSIT (Position Sensitive Indicators)	-- Position sensitive indicators are used to evaluate performance and logistics characteristics between identical components. Position sensitive indicators are included in the applicable work unit code manuals (NAVAIR 01-xxx-8 series) and are identified by a double asterisk (**) preceding the work unit code. When a component has been identified in the work unit code manual as position sensitive, it is mandatory that the position sensitive indicators be documented in Block A60 of the VIDS/MAF. These identifiers are divided into two groups as described in the following paragraphs:
General Position Codes	-- A two-digit alphanumeric code which indicates a specific location by use of plain language:
LH/RH	-- Indicates left-hand or right-hand installation such as main landing gear components, tires, side-by-side cockpit components, etc.

FW/AF	-- Indicates fore and aft positions such as tandem cockpit components.
UP/LW	-- Indicates upper or lower positions such as anticollision lights or antennas.
PR/SC/AL	-- Indicates primary, secondary, or alternate positions such as hydraulic components or multiple avionics component installations.
01, 02, 03, 04, etc.	-- Indicates positions using a sequential numbering system, such as helicopter rotor dynamic components, or a numbering system used to identify the position of fuel nozzles on a gas turbine engine.
Specific Position Codes	-- A two-digit alphanumeric code which indicates a specific location using alpha or numeric sequencing:
A1	-- Bleed Valve, Stg 5, 2 o'clock, #1 engine.
B1	-- Bleed Valve, Stg 5, 4 o'clock, #1 engine.
A2	-- Bleed Valve, Stg 5, 2 o'clock, #2 engine.
B2	-- Bleed Valve, Stg 4, 4 o'clock, #2 engine.
Block A62 FID (Fault Isolation Detection)	-- Leave blank, reserved for future use. (Under development.)
Block A65 SAFETY/EI SER (Safety/Engineer- ing Investigation Serial Number)	-- Enter the four-digit safety and engineering investigation serial number. Precede with zero(s) to complete the block if applicable.
Block A69 METER	-- Used for "G," "H," or "S" series TECs for on-equipment work.
SE MFGR	-- Leave blank.
Block A74	-- Leave blank (reserved for future expansion).
Block F21 Inventory Code	-- Enter the one-digit inventory code that describes the status of the aircraft during the transaction.
Block F22 PERM UNIT CODE (Permanent Unit Code)	-- Enter the six-digit permanent unit code of the organization completing the transaction.
Block F28	-- Leave blank (reserved for future expansion).
Repair Cycle Blocks	
Received Block	
Block B08 Date	-- Enter the Julian date the discrepancy was reported.

- Block B12 Time -- Enter the time the discrepancy was reported.
- Block B16 EOC (Equipment Operational Capability Code) -- Enter the appropriate equipment operational capability code that describes the degradation of the aircraft's mission capability.
- In Work Block
- Block B19 Date -- Enter the Julian date work was begun on the discrepancy.
- Block B23 Time -- Enter the time work was begun on the discrepancy.
- Block B27 EOC -- Enter the appropriate equipment operation capability code that describes the degradation of the aircraft's mission capability.
- Completed Block
- Block B30 Date -- Enter the Julian date the maintenance action was completed.
- Block B34 Time -- Enter the time the repair action was completed.
- Blocks B38-B49 Awaiting Maintenance Reason and Hours Blocks -- Enter the applicable AWM hours and reason codes for SCIR-related maintenance actions. These blocks will be filled out at the end of the maintenance action or upon closeout. Order of significance may be determined by local policy.
- Maintenance/Supply Record Blocks are as follows:
- Blocks B53, B65, C08, etc. (Job Status) -- Enter the proper alpha character prefix for any change in status. The alpha characters "M" (maintenance) and "S" (supply) shall be used. As an example, the prefix "S" will be used when maintenance is halted due to awaiting parts. The prefix "M" will be used to indicate the end of an AWP status or a change in mission capability.
- Blocks B54, B66, C09, etc. -- Enter the Julian date the "S" or "M" situation begins.
- Blocks B58, B70, C13, etc. -- Enter the time the "S" or "M" situation begins.
- Blocks B62, B74, C17, etc. (Equipment Operational Capability) -- Enter the appropriate equipment operational capability code that describes the degradation to the aircraft's mission capability.
- Removed/Old Item Blocks
Blocks E08 - E52 -- These blocks are completed on the VIDS/MAF when a repairable component is removed from the end item or major component on which work is being performed. Enter the manufacturer's code, serial number, and part number. If the part number is more than 15 characters, enter the last 15. In Block E38, enter the Julian date the repairable component is removed from the equipment. In Block E42, enter the time and cycle, preceded by an alpha character.

Installed/New Item Blocks -- These blocks are completed on the VIDS/MAF when a repairable component is installed on the end item or major component on which work is being performed. Enter the manufacturer's code, serial number, and part number. If the part number is more than 15 characters, enter the last 15. In Block G38, enter the time and cycle preceded by an alpha character.

NOTE

Removed/Installed Item Blocks shall be completed when recording cannibalization actions or when action taken codes "P," "Q," or "R" are used.

DISCREPANCY -- Enter a narrative description of the reported discrepancy.

PILOT/INITIATOR Block -- The individual who originates the discrepancy signs their name and enters their rank or rate, as applicable.

CORRECTIVE ACTION -- Enter the narrative description of the action taken to correct the discrepancy.

CF REQ/RFI Block -- This is a dual purpose block for use by the organizational and intermediate level activities. The organizational level activity will enter an "X" if a check flight is required after completion of the maintenance action. The intermediate level activity will enter an "X" if the repair action is ready-for-issue.

QA REQ/BCM Block -- This is a dual purpose block for use by the organizational and intermediate level activities. The organizational level will enter an "X" if the maintenance action requires a quality assurance representative inspection. (Not applicable to collateral duty inspection.) The intermediate level activity will enter an "X" if the repair action is beyond capability of maintenance.

CORRECTED BY Block -- The worker or crew leader who performs the maintenance action signs their name and enters their rate in this block.

INSPECTED BY Block -- The quality assurance representative or collateral duty inspector who inspects the job for proper standards signs their name and enters their rate in this block.

SUPERVISOR Block -- The work center supervisor or their assistant signs their name and enters their rate in this block to indicate that screening has been performed and that the quality assurance and tool control program requirements have been complied with.

Maint Control Block -- The individual clearing the discrepancy from the Visual Information Display System (VIDS) board will sign their rate in this block.

JOB CONTROL NUMBER (JCN) Blocks A08 - A17 -- Enter the assigned job control number. In the case of maintenance action being performed on transient aircraft (Navy or non-Navy), the first three positions, Block A08, are always the organization code of the aircraft reporting custodian.

NOTE

For subcustody support equipment in the custody of another department that requires repair by the aircraft intermediate maintenance department, the job control number will be assigned by the aircraft intermediate maintenance department production control, reflecting the aircraft intermediate maintenance department's organization code.

Block A19 WORK CENTER -- Enter the code of the work center performing the maintenance action described on the VIDS/MAF.

- UP/DOWN Block -- Check as appropriate to indicate equipment status.
- PRI -- Used by the intermediate level to assign workload priorities.
- TURN-IN
DOCUMENT
Block -- Enter the Julian date and requisition document number on which the specific item was ordered from the Failed/Required Material Blocks 45 and 49 to assist in local supply control.
- SYSTEM/
REASON Block -- Included for future use by the Naval Aviation Logistics Command Management Information System (NALCOMIS).
- MCN (MAF
Control Number) -- Included for future use by NALCOMIS.

WORK REQUEST CUSTOMER SERVICE OPNAV 4790/36A (Rev. 10-74) S/N 0107-LF-047-9180					
PART I: TO BE COMPLETED BY IMA (INTERMEDIATE MAINTENANCE ACTIVITY)					
1. DATE		2. JON		3. ISSUE DOCUMENT NUMBER	
4. PART NUMBER	5. PART SERIAL NUMBER		6. MANUFACTURE CODE	7. NOMENCLATURE	
8. NATIONAL STOCK NUMBER		9. QUANTITY	10. TYPE AIRCRAFT/EQUIPMENT	11. BU/SER NUMBER	
12. CATEGORY <input type="checkbox"/> NORS <input type="checkbox"/> NFE <input type="checkbox"/> WORK STOPPAGE <input type="checkbox"/> OTHER					
13. WORK REQUESTED: JUSTIFICATION FOR WORK REQUESTED					
14. CERTIFICATION: I CERTIFY THAT THIS WORK IS BEYOND THE CAPABILITY OF IMA. SIGNATURE					DATE
15. FOR FURTHER INFORMATION CONTACT-ACTIVITY AND TELEPHONE NUMBER			16. REQUIRED COMPLETION DATE	17. AUTHORIZED BY	
PART II: TO BE COMPLETED BY SSC (SUPPLY SUPPORT CENTER)					
18. <input type="checkbox"/> LOCAL AREA AVAILABILITY CHECKED <input type="checkbox"/> SUPPLY AVAILABILITY CHECKED <input type="checkbox"/> REQUIREMENT SATISFIED FROM ABOVE SOURCES <input type="checkbox"/> REQUIREMENT FORWARDED TO NARF FOR ACTION <div style="text-align: center; font-size: 2em; font-weight: bold; opacity: 0.5;">SAMPLE</div>					
19. CERTIFICATION/APPROVAL: I CERTIFY THAT THIS REQUIREMENT CANNOT BE SATISFIED FROM OTHER SOURCES - SIGNATURE (SUPERVISOR)					DATE
PART III: TO BE COMPLETED BY NARF (NAVAL AIR REWORK FACILITY)					
20. RECEIVED BY	20a. DATE	20b. PCN/WORK ORDER	20c. PRIORITY	20d. DATE WORK STARTED	
21. ACTION TAKEN					
22a. COMPLETED BY	22b. DATE	22c. INSPECTED BY	22d. SUPERVISOR	22e. MAN-HOURS	22f. EMT
23. SUPPORTED ACTIVITY NOTIFIED THAT WORK HAS BEEN COMPLETED BY		PERSON NOTIFIED	DATE	TIME	CHARGE TO FAN
24. DISPOSITION	<input type="checkbox"/> WORK COMPLETED	<input type="checkbox"/> F/J UNIT PROVIDED	<input type="checkbox"/> SUPPORTED ACTIVITY NOTIFIED TO ORDER FROM SUPPLY		
25. RECEIVED FROM SUPPORTING ACTIVITY: BY			DATE	TIME	
26. REMARKS:					
27. <input type="checkbox"/> APPROVED <input type="checkbox"/> DISAPPROVED		27a. REASON (IF WORK DISAPPROVED)		27b. SIGNATURE	

Sample Work Request Customer Service (OPNAV 4790/36A)

MATERIAL REQUISITION REGISTER
OPNAV 4790/11 (Rev. 1-75) S/N 0107-LF-047-9055

A. DOC. IDENT		1. ROUT IDENT		2. M/S		3. ORIG/SS/ REC	
B. FSC		4. ROUT IDENT		5. ADDT		6. U/I	
C. QUANTITY		STATUS		SAMPLE		D. PCN	
E. MFG CODE		F. PART NUMBER					
G. REFERENCE				I. JOB CONTROL NUMBER			
7. DM		8. SUPPL ADDRESS		9. SIG		J. TYPE EQUIP	
K. BUREAU/SER NO.			L. WORK UNIT CODE			M. REQUESTED BY/TIME	
N. RIC		O. FC		10. DISTR		P. PROJ	
						Q. PRI	
						R. RDD	
6 5	6 6	6 7	6 8	6 9	7 0	7 1	7 2
							7 3
							7 4
							7 5
							7 6
							7 7
							7 8
							7 9
							8 0
81. UNIT PRICE				82. CARD CODE		S. DELIVERY POINT	
83. REMARKS: (NOMENCLATURE, ETC.)							
84. RECEIVED/DELIVERED BY				85. DATE		86. TIME	

NOTES:

1. Alphabetical blocks to be filled out by requisitioner if applicable.
2. Numeric blocks to be completed by the supply activity.
3. Status block for joint use as deemed necessary for local use.
4. Form will be two-part standard carbon.
5. Copy one (original) will be filed by bureau number in sections B, C, or D of the material control board as applicable.
6. Copy two (carbon) will be displayed by document number sequence in Section E of the material control board.
7. Copy two (carbon) not requisitioned against a particular bureau number may be discarded, since copy one in master register Section E of the material control board will suffice.
8. As bureau numbers are changed due to cannibalization actions, pencil changes will be annotated on both copies and copy one will be shifted to the applicable bureau number.
9. After receipt of material or cancellation, copies one and two will be removed from visual display register and discarded or filed as local procedures require.
10. Heavy outlined blocks contain data necessary for MILSTRIP requisition format (read top to bottom, left to right).

Sample Material Requisition Register (OPNAV 4790/11)

[illegible]

[illegible]

OPNAV 4790/23A (Rev. 1-84) S/N 0107-LF-047-9118

OPNAVINST 8000.16A VOLUME IV 1 JUNE 2001

[illegible]

[illegible]

AERONAUTICAL EQUIPMENT SERVICE RECORD

NOMENCLATURE OF EQUIPMENT				REPLACEMENT			
				Interval		Due	
TYPE		MODEL		SER NO. (Hub if Prop.)			
<div>INSTALLED ON--</div>							
MODEL		BUNO/SERIAL NO.		DATE		BY (Activity)	
CURRENT ENGINE OR PROPELLER POSITION NO.							

DEPARTMENT OF THE NAVY, CHIEF OF NAVAL OPERATIONS

OPNAV 4790/29 (Rev. 1-84) S/N 0107-L4-047-9145

NOTE: **DO NOT ROLL OR BEND.** When removed from the logbook for separate shipment, this record must be secured with a suitable fastener (e.g., a metal file fastener) at the points. **DO NOT USE STAPLES.**

Sample Aeronautical Equipment Service Record (OPNAV 4790/29) (AESR)

Entry required at end of month and upon transfer

H-27

Equipment Operating Record (EOR) (OPNAV 4790/31A)

The EOR is a generic single page (dual sided) form that is utilized to record multiple entries of similar data. When this form is to be utilized to record Rounds Fired the data blocks/columns must be modified (relabeled) as follows:

Block/column No.	Title/label	Remark/Data Entries
1.	Equipment	List Nomenclature/part No./NSN
2.	T/M/S	Page 1 of ___, 2 of ___, etc.
3.	Serial Number	Serial Number
4.	Month/Year	Nov 91, Feb 96, etc.
5.	Operating Hours	
5.a.	This Month	Day 1-31
5.b.	Accum	Activity Name i.e. VFA-1, HC-26, VMA-4, HMLA-823, etc.
6.	Monitoring Systems	
6.a.	Blank	Install On
6.a.(1)	This Month	T/M/S Aircraft i.e. F-14, AH-1W, H-46
6.a.(2)	Accum	BUNO of Aircraft
6.b.	Blank	Loaded
6.b.(1)	This Month	Quantity Loaded
6.b.(2)	Accum	Type Loaded i.e. HEI, API, TP etc.
6.c.	Blank	Rounds Fired
6.c.(1)	This Month	Type Loaded Cont'd i.e. PGU, M100, etc.
6.c.(2)	Accum	Quantity Fired/Expended
6.d.	Blank	Totals Fired
6.d.(1)	This Month	Blank/Overflow
6.d.(2)	Accum	Total Quantities
7.	Activity	Individuals Name CDI/QASO/LPO/NCOIC
8.	Remarks	Recommended Notes such as Why Gun Not Fire Out

ADDITIONAL INSTRUCTIONS:

1. The top line of each new sheet will be the "Balance Forwarded" line. The following data blocks/columns will be filled out:

Block/column No.	Remark/Data Entries
4.	Month/Year
5.b.	Activity Name
6.a. - 6.c.	Balance Forwarded
6.d.(2)	Balance Quantity
7.	Name of Individual making entry.

2. At the end of each month a subtotal of rounds will be made on the next open line. The following data blocks/columns will be completed.

Block/column No.	Remark/Data Entries
4.	Month/Year
5.b.	Activity Name
6.a. - 6.c.	Monthly Subtotal
6.d.(1)	Quantity Fired during month
6.d.(2)	Leave Blank
7.	Name of Individual making entry.

3. If an error is made a line will be drawn through the entire information/data line, the individual making the entry will initial the drawn line. The correct data will be printed in the next open line.

OPNAV 4790/136A (Rev. 1-84)

Sample Preservation/Depreservation Record (OPNAV 4790/136A) (Logbook) (AESR)

AIRCRAFT INSPECTION AND ACCEPTANCE RECORD

OPNAVINST 4790.2D

1. A/C BU/SER NO.	2. T/M/S	3. RPT. CUST.	4. OXY	5. FUEL	6. OIL				7. DATE	
				GRADE	QTY	GRADE	1	2	3	4
<div>8. ORDNANCE/SPECIAL EQUIPMENT/LIMITATIONS/REMARKS</div> <div>SAMPLE</div>				<div>9. I have personally inspected this aircraft IAW the applicable MRCs/checklists. Any discrepancies noted have been entered on OPNAV Form 4790/38.</div> <div>SIGNATURE OF PLANE CAPTAIN</div> <div>RANK/RATE</div>						
				<div>10. Certification of safe for flight condition by the MO, MMCO, or MCO. Other persons may sign this form if authorized.</div> <div>SIGNATURE</div> <div>RANK/RATE</div>						
				<div>11. I have inspected the last ____ discrepancy reports, insured proper filing of weight and balance data and accept this aircraft for flight.</div> <div>SIGNATURE OF PILOT IN COMMAND</div> <div>RANK/RATE</div>						

OPNAV 4790/141 (Rev. 2-86) REPLACES OPNAV 3760/2D WHICH MAY BE USED UNTIL SUPPLIES ARE EXHAUSTED S/N 0107-LF-047-9706

Sample Aircraft Inspection and Acceptance Record (OPNAV 4790/141)

Type Equipment Codes for Targets

The type equipment codes here are excerpted from NAMS0 4790.A7210-01, 3M Aviation Type Equipment Code Listing.

Users should use the most current listing available. Type equipment codes ending in "9" are for those targets that are "not otherwise coded." Type equipment codes ending in "X" are for specific targets with no specific model, research, development, test and evaluation targets, or one-of-a-kind targets for which no type equipment codes exist.

<u>Type Equipment Code</u>	<u>Model</u>
MFB9	BQM-34
MFBA	BQM-34A
MFBB	BQM-34E
MFBC	BQM-34S
MFBD	BQM-34T
MF BX	BQM-34
MFD9	BQM-74
MFDB	BQM-74E
MFDX	BQM-74
MDC9	AQM-37
MDCA	AQM-37A
MDCB	AQM-37C
MDCX	AQM-37
MWM9	MQM-8
MWMA	MQM-8G
MWMB	MQM-8X
MWMX	MQM-8
AFPE	QF-4N
AFCE	QF-86F
M6F9	QLT
M6F8	QLT-1C
M6FX	QLT
M6D9	Tow Target Systems
M6DA	Tow Target Systems Equipment
M6DC	A/A47U-3
M6DD	A/A47U-4
M6DE	TDU-32A/B
M6DF	TDU-34A
M6DX	Tow Target Systems

<u>Type Equipment Code</u>	<u>Rocket/ Engine</u>	<u>Model</u>
JMCB	Y69-T-29	BQM-34S
JMBA	J85-GE-100A	BQM-34S
JMGA	YJ69-T-406	BQM-34E
JMGA	YJ69-T-406	BQM-34T
JUEA	YJ400-WR-404	BQM-74E
JFHA	J47-GE-27	QF-86
JRPR	J79-GE-8B	QF-4
JRRM	J79-GE-8C	QF-4
JRSJ	J79-GE-8D	QF-4

A. NOMENCLATURE		B. WORK UNIT CODE	C. FSCM	D. REPLACEMENT INTERVAL	E. REPLACEMENT DUE
F. PART NUMBER	G. SERIAL NUMBER		H. CFA		

[illegible][illegible]

SAMPLE

[illegible]

Scheduled Removal Component Card (OPNAV 4790/28A)

The Scheduled Removal Component (SRC) card is a two page form. When an SRC card contains no space for additional entries, a new one is prepared and both accompany the item until they are consolidated at the repair or rework site. Upon completion of repair or rework, the SRC card will be consolidated. A new SRC card will be initiated if no additional space remains for entries. A copy of the SRC card will be forwarded to the central repository at the Naval Aviation Maintenance Office, Code 23, Naval Air Station, Patuxent River, Patuxent River, MD 20670-5106.

SRCs are documented as follows:

Section I Identification Data

- Block A -- Nomenclature. Enter the nomenclature of the item.
- Block B -- Work Unit Code. Enter the work unit code.
- Block C -- FSCM. Enter the five-digit manufacturer's code of the item.
- Block D -- Replacement Interval. Enter the hours, days, counts, etc., interval after which the component must be removed and replaced.
- Block E -- Replacement Due. This entry is computed when the item is installed. It reflects the total count (whole numbers only), such as hours, starts, landings, engine monitoring system counts on the aircraft or equipment, or the day/month/year when it must be replaced, for example, 12 JUL 86. Replacement due equals total aircraft or equipment hours or counts, plus replacement interval, minus hours or counts on the item at installation. For example, a 500-hour replacement interval item with 200 hours since overhaul installed on an aircraft with 795 hours (total aircraft hours), will have an entry of 1095 hours in the Replacement Due Block. The entries are made in pencil.
- Block F -- Part Number. Enter the part number.
- Block G -- Serial Number. Enter the serial number of the item.
- Block H -- CFA. Enter the applicable cognizant field activity.

Section II Installation Data

- Block A -- Date. Enter the YYMMDD date that the item is installed.
- Block B -- BUNO/SERNO Installed On. Enter the bureau number of the aircraft, or the serial number of the equipment on which the item is being installed.
- Block C -- Total Aircraft/Equipment Hours or Counts. Enter the hours or counts (whole numbers only) of the aircraft or equipment on which the item is being installed. Uncaptioned columns are provided for monitoring systems and may be labeled as required, for example, LCF, ELCF, EOT. Aircraft or equipment without monitoring systems will use the first column only.
- Block D -- Total Hours or Counts on Item. Enter the hours or counts (whole numbers only) since new and overhauled or reworked. Uncaptioned columns have been provided and will be labeled with the appropriate information required, for example, TSN, TSO. When entering data for new material, the entry in the TSO,TSR column will be NEW. When the total hours or counts since new is not known, the entry in the TSN column will be UNK.

Section III Removal Data

- Block A -- Date. Enter the YYMMDD date the item is removed.
- Block B -- Total Aircraft/Equipment Hours or Counts. Enter the hours/counts (whole numbers only) of the aircraft or equipment on which the item is being removed. Uncaptioned columns are provided for aircraft or equipment that have monitoring systems installed and may be labeled as required, for example, LCF, ELCF, EOT. Aircraft or equipment without monitoring systems will use the first column only.
- Block C -- Total Hours or Counts on Item. Subtract total aircraft or equipment hours or counts at installation from total aircraft/equipment hours or counts at removal. Add to total hours or count on item at installation and center in the appropriate columns. Label columns as required.
- Block D -- Reason for Removal and Job Control Number. Enter the reason for removal and the job control number from the VIDS/MAF that documented the removal of the item.

Section IV Technical Directives

- Block A -- Technical Directive Identification
- Block A(1) -- Code. Enter the technical directive code.
- Block A(2) -- Basic. Enter the technical directive basic number.
- Block A(3) -- INT. If an interim technical directive, enter "I," if not level blank.
- Block A(4) -- REV. Enter the revision letter, if applicable.
- Block A(5) -- AM. Enter the numerical amendment number, if applicable.
- Block A(6) -- PT. Enter the numerical technical directive part number, for example, part-01, 02, if applicable.
- Block A(7) -- KIT. Enter the kit number, enter 00 if no kit is required.
- Block A(8) -- PRI. Enter "I" for Immediate, "U" for Urgent, "R" for Routine, or "K" for Previously Incorporated (Record Purpose), as applicable.
- Block B -- Status. Enter the code indicating the status of the technical directive. No status codes other than those prescribed shall appear on the aircraft service record nor is any code used to indicate other than its intended meaning.
- Block C -- Title/Remarks. Enter the title and a brief description of the technical directive.
- Block D -- Compliance
- Block D(1) -- By (Activity). Enter the three-position organization code of the activity complying with the technical directive, for example, AC3.
- Block D(2) -- Date. Enter the YYMMDD date that the technical directive was completed.

Block E -- Signature. A person having logbooks and records signature authority will sign this block.

Section V Repair/Rework/Overhaul

Block A -- Date. Enter the YYMMDD date that the repair, rework, or overhaul was accomplished.

Block B -- Activity. Enter the three-position 3M organization code of the activity accomplishing the repair, rework, and overhaul, for example, D98.

Block C -- Description. Indicate whether the item has been repaired, reworked, or overhauled and a concise narrative of the maintenance performed.

Block D -- Signature. A person having logbooks or records signature authority will sign this block.

EQUIPMENT HISTORY RECORD (EHR) CARD

SECTION I - IDENTIFICATION DATA

A. NOMENCLATURE		B. WORK UNIT CODE		C. FSCM		D. REPLACEMENT INTERVAL		E. MAINTENANCE DUE	
F. PART NUMBER		G. SERIAL NUMBER		H. CFA		I. REFERENCE			

SECTION II - INSTALLATION DATA

A. DATE	B. BUNO/SERNO INSTALLED ON	C. TOTAL AIRCRAFT EQUIPMENT HOURS OR COUNTS				D. TOTAL HOURS OR COUNTS ON ITEM			

SAMPLE

SECTION III - REMOVAL DATA

A. DATE	B. TOTAL AIRCRAFT EQUIPMENT HOURS OR COUNTS				C. TOTAL HOURS OR COUNTS ON ITEM				D. REASON FOR REMOVAL AND JOB CONTROL NUMBER

SECTION IV - MAINTENANCE RECORD

A. DATE	B. ACTIVITY	C. DESCRIPTION	D. SIGNATURE

SECTION V - INSPECTION RECORD

A. TYPE AND DESCRIPTION OF INSPECTION	B. REFERENCE	C. DATE COMMENCED	D. DATE COMPLETED	E. ACTIVITY	F. SIGNATURE

SECTION VI - TECHNICAL DIRECTIVES

A. TECHNICAL DIRECTIVE IDENTIFICATION								B. STATUS	C. TITLE/REMARKS	D. COMPLIANCE		E. SIGNATURE
(1) CODE	(2) BASIC	(3) INT	(4) REV	(5) AM	(6) PT	(7) KIT	(8) PRI			(1) BY (ACTIVITY)	(2) DATE	

OPNAV 4790/28A (Rev. 1-84) REVERSE

Sample Equipment History Record Card (OPNAV 4790/113) (Cont'd)

Equipment History Record Card (OPNAV 4790/113)

An EHR card is a two page form. When an EHR card contains no space for additional entries, a new one is prepared and both accompany the assembly until they are consolidated at the repair or rework site. Upon completion of repair or rework, the EHR card will be consolidated. A new EHR card will be initiated if no additional space remains for entries. A copy of the EHR card will be forwarded to the applicable maintenance engineering cognizant field activity.

Section I Identification Data

- Block A -- Nomenclature. Enter the nomenclature of the item.
- Block B -- Work Unit Code. Enter the work unit code of the item.
- Block C -- FSCM. Enter the five-digit manufacturer's code.
- Block D -- Replacement Interval. Enter the hours, days, counts, etc., after which the component must be removed and replaced, if applicable, otherwise enter on-condition.
- Block E -- Maintenance Due. This block is used to remind the custodian when the installed component removal is due in accordance with its time cycle requirement. The entry is computed when the component is installed and indicates the total count, hours, starts, rounds, or days, that will be against the end item when the installed component reaches its interval requirements. For example, a component with a 200 hours interval installed on an aircraft with 1287 flight hours will have a 1487 flight hour entry in the block. Entries in this block are made in pencil.
- Block F -- Part Number. Enter the part number of the item.
- Block G -- Serial Number. Enter the serial number of the item.
- Block H -- CFA. Enter the cognizant field activity responsible for the item.
- Block I -- Reference. Enter the authorizing reference for addition or deletion of the item to the EHR Program.

Section II Installation Data

- Block A -- Date. Enter the YYMMDD date that the item is installed.
- Block B -- BUNO/SERNO Installed on. Enter the bureau number of the aircraft, or the serial number of the equipment on which the item is being installed.
- Block C -- Total Aircraft/Equipment Hours or Counts. Enter the hours or counts (whole numbers only) of the aircraft or equipment on which the item is being installed. Uncaptioned columns are provided for aircraft or equipment that have monitoring systems installed and may be labeled as required, for example, LCF, ELCF, EOT. Aircraft or equipment without monitoring systems will use the first column only.
- Block D -- Total Hours or Counts on Item. Enter the hours/counts (whole numbers only) since new and repaired/reworked. Uncaptioned columns have been provided and will be labeled with the appropriate information required, for example, TSN, TSO, TSR, LCF, or EOT. When entering data for new material, the entry in the TSO/TSR column will be new. When the total hours or counts since new is not known, the entry in the TSN column will be UNK.

Section III Removal Data

- Block A -- Date. Enter the YYMMDD date that the item is removed.
- Block B -- Total Aircraft/Equipment Hours or Counts. Enter the hours or counts (whole numbers only) of the aircraft/equipment on which the item is being removed (TSN). Uncaptioned columns are provided for aircraft or equipment that have monitoring systems installed and may be labeled as required, for example, LCF, ELCF. Aircraft or equipment without monitoring systems will use the first column only.
- Block C -- Total Hours or Counts on Item. Subtract the total aircraft or equipment hours or counts at installation from the total aircraft or equipment hours or counts at removal. Add to the total count on the item at installation and enter in the appropriate columns. Label columns as required.
- Block D -- Reason for Removal and Job Control Number. Enter the reason for removal and JCN from the applicable VIDS/MAF.

Section IV Maintenance Record

- Block A -- Date. Enter the YYMMDD date the maintenance is performed.
- Block B -- Activity. Enter the three-position 3M organization code of the activity performing the maintenance, for example, WC5.
- Block C -- Description. Detail the action and major parts replaced with reason with removal.
- Block D -- Signature. A person having logbooks or records signature authority will sign this block.

Section V Inspection Record

- Block A -- Type and Description of Inspection. Enter the type and description of the inspection that affects the equipment or component.
- Block B -- Reference. Identify the document directing the inspection, for example, message originator and DTG or the IRAC and publication number.
- Block C -- Date Commenced. Enter the YYMMDD date that the inspection began.
- Block D -- Date Completed. Enter the YYMMDD date that the inspection was completed.
- Block E -- Activity. Enter the three-position 3M organization code for the activity performing the inspection, for example, AC4.
- Block F -- Signature. A person having logbooks or records signature authority will sign this block.

Section VI Technical Directives

- Block A -- Technical Directive Identification
- Block A(1) -- Code. Enter the technical directive code.
- Block A(2) -- Basic. Enter the technical directive basic number.
- Block A(3) -- INT. If an interim technical directive enter "I," if not leave blank.

- Block A(4) -- REV. Enter the revision letter, if applicable.
- Block A(5) -- AM. Enter the numerical amendment number if applicable.
- Block A(6) -- PR. Enter the numerical technical directive part number, for example, part-01, 02, if applicable.
- Block A(7) -- KIT. Enter the kit number, enter 00 if no kit is required.
- Block A(8) -- PRI. Enter "I" for Immediate, "U" for Urgent, "R" for Routine, or "K" for Previously Incorporated (Record Purpose), as applicable.
- Block B -- Status. Enter the code indicating the status of the technical directive. No status codes other than those prescribed shall appear on the aircraft service record nor is any code used to indicate other than its intended meaning.
- Block C -- Title/Remarks. Enter the title and a brief description of the technical directive.
- Block D -- Compliance
- Block D(1) -- By (Activity). Enter the three-position 3M organization code of the activity complying with the technical directive, for example, AT5.
- Block D(2) -- Date. Enter the YYMMDD date that the technical directive was completed with.
- Block E -- Signature. A person having logbooks or records signature authority will sign this block.

APPENDIX I

Forms

APPENDIX I

Forms

I1 The forms listed in this appendix are available through the supply system using CD ROM NAVSUP PUB 600 (NLL), or through General Services Administration (GSA). Forms that are available through GSA will have an asterisk beside the national stock number. Use the following notes for forms that do not have a national stock number listed.

B. Retention SECNAVINST 5212.5D (NOTAL) must be followed when it applies to records retention periods.

NOTES

A. Preprinted; Automatic distribution to Metrology Automated System for Uniform Recall and Reporting (MEASURE) participants by Measure Operational Control Centers, (MOCCs) Norfolk and San Diego.

Form No./Rev. Date	Title	Stock No.
DD 200 (2/91)	Financial Liability Investigation of Property Loss	
DD 250 (11/92)	Material Inspection and Receiving Report	
DD 626 (9/98)	Motor Vehicle Inspection	
DD 836C (9/98)	Special Instructions for Motor Vehicle Drivers	
DD 1149C (1/97)	Requisition and Invoice/Shipping Document	0102-LF-017-7900
DD 1155 (1/98)	Order for Supplies or Services Request	0102-LF-016-9900
DD 1371 (9/98)	Delivery at Stopoff Unloading Point, Consignee's Receipt for	0102-LF-013-5000
DD 1387 (11/86)	Military Shipping Label	0102-LF-004-4000
DD 1387-2 (6/86)	Special Handling Data/Certification	0102-LF-001-3877
DD 1574 (10/88)	Serviceable Tag-Materiel	0102-LF-014-5600
DD 1577-2 (10/66)	Unserviceable Repairable Tag-Materiel	0102-LF-016-0000
DD 1907 (9/99)	Signature and Tally Record	0102-LF-010-0400
DD 2332 (9/99)	Product Quality Deficiency Report Exhibit	0102-LF-007-6400
NAVAIR 4790/3 (10/90)	Maintenance Requirements Card	0102-LF-011-0400
NAVCOMPT 2275 (8/81)	Work and Services, Order for	0104-LF-702-2751
NAVSUP 1296 (8/87)	Ammunition Master Stock Record Card	0108-LF-501-2961
NAVSUP 1297 (8/87)	Ammunition Lot/Location Card	0108-LF-501-2971
NAVSUP 1353-1 (1/79)	MILSTRIP Message Transmittal Worksheet	0108-LF-501-3537
NAVSUP 1356 (8/87)	Ammunition Serial/Location Card	0108-LF-501-3561

Form No./Rev. Date	Title	Stock No.
OPNAV 4790/5 (7/69)	Aircraft Flight Schedule Card	0107-LF-770-3100
OPNAV 4790/11 (1/75)	Maintenance Requisition Register	0107-LF-047-9055
OPNAV 4790/12 (8/90)	Quality Assurance Representative/Inspector/ Recommendation/Designation	0107-LF-010-5700
OPNAV 4790/22A (1/84)	Inspection Record (Separator)	0107-LF-047-9110
OPNAV 4790/23A (1/84)	Repair/Rework Record	0107-LF-047-9118
OPNAV 4790/24A (1/84)	Technical Directives	0107-LF-047-9124
OPNAV 4790/25A (8/69)	Miscellaneous/History	0107-LF-770-3505
OPNAV 4790/28A (1/84)	Scheduled Removal Component Card	0107-LF-047-9142
OPNAV 4790/29 (1/84)	Aeronautical Equipment Service Record (Separator)	0107-LF-047-9145
OPNAV 4790/31A (1/84)	Equipment Operating Record	0107-LF-047-9157
OPNAV 4790/35 (8/81)	Maintenance Instruction	0107-LF-047-9177 - Note 1
OPNAV 4790/36A (10/74)	Work Request - Customer Service	0107-LF-047-9180
OPNAV 4790/51 (8/88)	Support Equipment Custody and Maintenance History Record	0107-LF-003-3900 - Note 3
OPNAV 4790/52 (3/83)	Support Equipment Preoperational Record	0107-LF-770-5501 - Note 4
OPNAV 4790/58 (5/75)	Metrology Equipment Recall and Report (Meter) Card	Note A
OPNAV 4790/60 (5/88)	VIDS/MAF	0107-LF-002-5900
OPNAV 4790/64 (5/88)	Support Equipment Transaction Report	0107-LF-001-6600
OPNAV 4790/66 (5/88)	Technical Publication Deficiency Report	0107-LF-002-4400
OPNAV 4790/80 (10/92)	SE Rework Schedule Request	0107-LF-014-9700
OPNAV 4790/102 (1/92)	USN Aviation Support Equipment Operator's License	0107-LF-012-9600
OPNAV 4790/108 (6/81)	Support Equipment Misuse/Abuse	0107-LF-047-9550
OPNAV 4790/113 (1/84)	Equipment History Record Card	0107-LF-047-9576
OPNAV 4790/136A (1/84)	Preservation/Depreservation Record	0107-LF-047-9682
OPNAV 4790/141 (12/89)	Aircraft Inspection and Acceptance Record	0107-LF-008-4600 - Note 5

Form No./Rev. Date	Title	Stock No.
OPNAV 8600/1 (3-91)	Maintenance Data System - Configuration Summary HARM	Stocked by NAWCWD Point Mugu, CA
OPNAV 8600/2 (3-91)	Maintenance Data System - Configuration Summary MAVERICK	Stocked by NAWCWD Point Mugu, CA
OPNAV 8600/4 (3-91)	Maintenance Data System - Configuration Summary SIDEARM	Stocked by NAWCWD Point Mugu, CA
OPNAV 8600/5 (3-91)	Maintenance Data System - Configuration Summary HARPOON	Stocked by NAWCWD Point Mugu, CA
OPNAV 8600/6 (3-91)	Maintenance Data System - Configuration Summary WALLEYE	Stocked by NAWCWD Point Mugu, CA
OPNAV 8600/8 (3-91)	Maintenance Data System - Configuration Summary SIDEWINDER	Stocked by NAWCWD Point Mugu, CA
OPNAV 8600/9 (3-91)	Maintenance Data System - Configuration Summary PHOENIX	Stocked by NAWCWD Point Mugu, CA
OPNAV 8600/10 (3-91)	Maintenance Data System - Configuration Summary SPARROW	Stocked by NAWCWD Point Mugu, CA
OPNAV 8600/13 (3-91)	Maintenance Data System - Configuration Summary AMRAAM	Stocked by NAWCWD Point Mugu, CA
OPNAV 8600/14 (6-94)	Maintenance Data System - Configuration Summary PENGUIN	Stocked by NAWCWD Point Mugu, CA
OPNAV 8600/16 (3-95)	Maintenance Data System - Configuration Summary HARPOON/SLAM/SLAM ER	Stocked by NAWCWD Point Mugu, CA
OPNAV 8600/18 (9/99)	Maintenance Data System - Configuration Summary JSOW	Stocked by NAWCWD Point Mugu, CA
SF 368 (10/85)	Product Quality Deficiency Report (CAT II)	7540-00-133-5541 Stocked by GSA
11ND-PMTC-TRIAL 4760 (9/81)	Interim Manual Change Release	Stocked by NAWCWD Point Mugu, CA

APPENDIX J

Missile Presentencing Inspection Procedures

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APPENDIX J

Missile Presentencing Inspection Procedures

J1 Purpose. These procedures provide guidance for performing Missile Presentencing Inspections (MPI) on Air Launched Missile (ALM) assets onboard returning carriers. The MPI is performed onboard the carrier by Weapons Department personnel or a missile presentencing inspection team comprised of Naval Air Warfare Center Weapons Division (NAVAIRWARCENWPNDIV) Naval Weapons Support Team and Weapons Department personnel. The MPI recertifies serviceable ALM assets, thus reducing reprocessing requirements at the Weapons Station (WPNSTA) and the Naval Airborne Weapons Maintenance Unit One (NAWMU-1). Presentencing includes segregation and implementation of inspection criteria for fleet returned ALM assets.

J2 Scope. This appendix does not address missile sentencing inspections (MSI) which are performed at WPNSTA on ALM assets offloaded from the carriers and supporting ships. Nor does it address HARPOON Surface variants MSI which is performed pierside. The MPI is performed onboard the carrier whereas the MSI is performed ashore.

J3 Planning and Preliminary Coordination

a. The MPI Coordinator, Type Commander (TY-COM) or designated alternate shall perform the following tasks:

- (1) Coordinate development of the MPI Plan.
- (2) Provide a Predeployment MPI Plan and briefing to the ship's weapons officer or designated assistant.
- (3) Provide guidance to the Ordnance Handling Officer (OHO) and designated weapons department personnel that comprise the MPI team.
- (4) Establish a proposed MPI date.
- (5) Determine the locations and conditions (e.g., pier side, at anchorage, or afloat) for presentencing.
- (6) Comprise MPI team of NAVAIRWARCENWPNDIV representatives or weapons department

personnel of the returning carrier who will perform the presentencing and designate the OHO as the team leader.

(7) Coordinate submission of visit requests, area clearances, and travel itineraries (as required) to TYCOMs and the carrier.

(8) Provide the MPI Plan to the team leader.

b. The team leader will perform the following tasks:

(1) Assign personnel to the MPI team.

(2) Determine the requirements for quantity and types of material condition tags/labels. The appropriate requirements may be determined from the MPI Plan. The appropriately colored tags should be prestamped with as much data as possible.

(3) Confer with MPI team members to complete preparations.

c. OHO. Responsible for the packing, presentencing, and offload of ALM assets aboard the carrier.

d. The MPI team shall perform the following tasks:

(1) Ensure that all uncontainerized assets are properly packaged and tagged.

(2) Ensure that serviceable assets meet all requirements for Ready-For-Issue (RFI) material.

(3) Acquire and process the data needed to cross-deck assets.

(4) Prepare an MPI summary report.

(5) Debrief the carrier's Weapons Officer, respective Force Weapons Officer, and MPI Coordinator.

J4 MPI Plans. MPI plans are developed for each ship by NAVAIRWARCENWPNDIV (362300E). They provide the status of the carrier's ALM inventory and are developed from information extracted from the Serialized Lot Item Tracking (SLIT) data and cross checked with a second classified data base. Both data bases are contained

within the Naval Ammunition Logistics Center (NAVAMMOLOGCEN) Conventional Ammunition Integrated Management System (CAIMS). Ammunition Transaction Reports (ATR) are also utilized to insure that more recent changes to the ALM status which might not have been entered in CAIMS are counted. Each MPI plan is developed in three stages as follows:

a. Predeployment MPI Plan. This plan is basically a list of all ALMs which are reported to be aboard ship. It is provided to the carrier during the predeployment MPI brief as a means to reconcile any differences between ship's current inventory and NAVAMMOLOGCEN CAIMS/SLIT data.

b. MPI Plan. This plan is used as a working copy by the MPI team to assist the presentencing process. Changes are entered in the plan during pre-sentencing to reflect actual ALM inventory status. Upon completion of the MPI, the plan is returned to the MPI coordinator.

c. Final MPI Plan. This plan depicts the actual status of all ALM assets aboard ship. It incorporates all actions taken during the MPI process into the working copy plan. The MPI Plan provides a compilation of resealed containers, corrected material condition code tags, extended MDDs, or any other relevant findings.

d. Plan Structure

(1) Part I-ALM Disposition Summary. This summary tabulates onboard assets by missile system and Naval Ammunition Logistics Code (NALC). Information includes missile quantities which are onboard, missiles available for crossdecking, missiles returning to Naval Weapons Stations (NWS) for processing, and missiles that have been assigned a special disposition.

(2) Part II-ALM Disposition Summary by Condition Code/Source Code. This summary tabulates assets by NALC and includes condition code, source code, and proposed disposition.

(3) Part III-MPI Worksheets. MPI worksheets are computer generated checklists used by the MPI team members to document the inspections performed. Assets grouped alphanumerical by NALC and Serial Number, and display the following information:

- (a) NALC
- (b) Serial Number

(c) Missile History (Deep Stowed (DS), Ready Service (RS), Captive Flown (CF))

(d) MSI Code (Condition Code and Source Code)

(e) Maintenance Due Date (MDD)

(f) Expiring Component

(g) Expiring Component Date

(h) Comments

(i) Proposed Disposition

(j) Last Action Code (LAC)

(4) Part IV-Supplemental Data. MPI supplemental data includes appendices A thru F as described in the following:

(a) Appendix A-Serviceable In-Service Time (SIST)/Service Life Designations for Airborne Weapons addresses asset service life.

(b) Appendix B-contains tagging instructions for tactical ALM offloads.

(c) Appendix C-contains MPI worksheet summary blanks and allows for the recording of the same information as described in part III.

(d) Appendix D-provides a serial number to NALC cross-reference.

(e) Appendix E-provides a listing of the NALC, National Item Identification Number (NIIN) for each asset, and the total quantity of each onboard.

(f) Appendix F-provides the ALM wing and fin by NALC and serviceability.

J5 General MPI Procedures. The procedures for presentencing assets aboard fleet units may vary depending on the assets in the inventory and the offload method. Units with numerous bare stowed ALMs or containerized components require more emphasis on packaging and segregation.

a. Upon arrival to the ship, an in-briefing should be scheduled with the Weapons Department. The MPI team leader should review the presentencing and offload plan.

Coordination with packaging and staging will be required for assets which must be moved for presentencing.

b. Specific tasks which should be discussed prior to beginning the MPI process include:

(1) The identification of assets onboard including the serial numbers of recent onloads and offloads.

(2) The identification (by serial number) of assets which have been placed in ready service, their status (whether serviceable or not), and cause if rejected.

(3) The identification (by serial number) of assets which have been captive flown, the number of hours accumulated since receipt, hours logged in log book, number of catapults and arrested landings, their status (serviceable or unserviceable), and cause if rejected.

c. The following procedures assume that a complete MPI team is available and the carrier's ALM assets have been readied for inspection. The team will be supported by members of the ship's crew and shall perform the following functions:

(1) Inspect all ALM containers. Refer to para J10.

(2) Modify SIST of assets as required.

(3) Install traceable seals as required.

(4) Provide direction for container stenciling modification as required. .

(5) Determine condition codes of all ALM assets. Refer to para J6.

a. For those assets effected by an MDD extension or a Notice of Ammunition Reclassification (NAR) action, the afloat unit will make a notation to that effect on the tags and the DD 1348-1 accompanying the ALM, and change markings on containers and cradles prior to offload.

b. Where MDD discrepancies arise, asset log-book should be checked for date of last test. Refer to appendix D for proper SIST designations.

(6) Provide properly completed material condition tags for ALM assets.

(7) Assure proper packaging and unitizing of ALM assets as required.

(8) Correct the MPI Plan.

(9) Debrief Weapons Department.

J6 Ammunition Condition Codes and Defect Codes.

Ammunition Condition Codes and Defect Codes are required to segregate and identify the physical condition of ammunition material. Specific procedures regarding the use of material condition tags/labels are addressed in paragraph J7. See appendix B, pages B-13 through B-26 for ammunition condition code definitions or refer to NAVSUP P-724 (NOTAL). Further amplification of Ammunition Condition Codes and Defect Codes may be referred to the cognizant inventory manager.

a. Condition Code A (DD 1574, Serviceable Label-Material Tag). Assets meeting the following criteria shall be assigned condition code A:

(1) Those ALMs determined to have been deep stowed and the MDD has not expired. Traceable seals are to be taken as primary evidence that assets have been deep stowed. If the seals are missing, other evidence of deep stowage include ship records, location of assets among the ship's deep stowed inventory, and/or physical appearance of assets within the container. An in-container inspection shall be performed on those assets that were stored out of container. Disposition of assets shall be as specified by the TYCOM or returned to shore-based storage and placed in RFI inventory. The MPI Plan will be annotated accordingly.

(2) Serviceable wings and fins in sealed containers.

(3) Undamaged ready service or captive flown ALM. An in-container inspection shall be performed. This sub-paragraph applies to AMRAAM, HARM, HARPOON/SLAM/SLAM ER, MAVERICK, SIDEARM, SIDEWINDER, SEA SPARROW, and SPARROW.

(4) ALMs in sealed containers whose SIST has been extended due to changes in service life. A notation shall be placed on the condition code tag stating reason for SIST extension.

(5) Captive flown ALMs assigned by TYCOMs to fleet units or for crossdecking. The remarks block shall indicate the message number which directed crossdeck action.

b. Condition Code E (DD 1577, Unserviceable Label-Material Tag). Those ALMs whose SIST has expired are to be returned to Naval Weapons Stations (NWS) for

processing. The DD 1577 shall be annotated in remarks as "MDD EXPIRED."

c. Condition Code F (DD 1577, Unserviceable Label-Material Tag). Those ALMs determined to be damaged, rejected, contaminated or any undamaged ALM asset that cannot be properly packaged.

d. Condition Code K (DD 1575, Suspended Label-Material Tag). Those assets of unknown condition. This includes ALMs in containers with broken seals whose history is unclear. The DD 1575 shall be annotated in remarks as "STATUS UNKNOWN."

e. Condition Code J (DD 1575, Suspended Label Material Tag). Those assets suspended pending condition classification or analysis.

J7 Material Condition Tags/Labels. As part of their presentencing and disposition duties, the MPI team is responsible for completing material condition tags/labels in accordance with NAVSUP P-805. As a general rule, if assets in a container or unitized pallet load have the same condition code and NALC, one tag can be used per container or unitized pallet load. If the NALCs are mixed in a container, a separate tag is required for each NALC. The three Material Condition Tags/Labels are the DD-1574, DD-1575, and DD-1577.

a. Blocks common to DD 1574, DD 1575, and DD 1577 are described below:

(1) NSN, Part Number, and Item Description. Enter cognizance code, National Stock Number (a 13-digit numeric code), NALC, and item description.

(2) Serial Number/Lot Number. Enter the serial number associated with the ALM.

(3) Unit of Issue. Enter the appropriate unit of issue (e.g., ea., set, etc.).

(4) Quantity. Enter the total quantity of items covered by the tag.

(5) Contract or Purchase Order Number. Leave blank.

(6) Inspection Activity. Enter appropriate activity (e.g., NAWC/YKTN, etc.).

(7) Condition Code. Enter the applicable condition code letter which denotes the condition of the material.

(8) Inspector's Name or Stamp and Date. Upon verification, sign or stamp and enter the current date.

(9) Remarks. Enter the two-character central data collection agency exposure/status code (e.g., FE, FN, etc.) in the bottom right-hand corner of this block. The appropriate reporting codes are listed in appendix B of the MPI plan.

b. Unique Blocks, DD 1574 (Serviceable). The only unique block of the DD 1574 is the Next Inspection Due/Overage date block. In this block, enter the current MDD or expiration date for ALM assets. The MDD or expiration date should be listed by month and year (e.g., 0491).

c. Unique Blocks, DD 1575 (Suspended). The following blocks are unique to the DD 1575:

(1) Next Inspection Due. Enter current MDD for ALMs. The MDD should be listed by month and year (e.g., 0491).

(2) Reason or Authority. Enter the reason for the material condition code.

d. Unique Blocks, DD 1577 (Unserviceable/Repairable). The following blocks are unique to the DD 1577:

(1) Expiring MDD, if applicable, or reason for Repairable Condition. Enter the reason that the asset was presentenced unserviceable. This reason should include notation of any known damage, failure, or rejection. If the asset was dropped, attempt to determine conditions of the incident and report to the cognizant NAVAIRWAR-CENWPNDIV activity.

(2) Removed From. Identify carrier by hull number (e.g., CVN-72).

J8 ALM CATS/TRAPS, Flight Limitations.

(a) JSOW has a Cats/Traps Limitation as listed :

1. AGM-154A all NALCs 50 Cats/Traps.
2. AGM-154B all NALCs 50 Cats/Traps.
3. AGM-154C all NALCs 50 Cats/Traps.

All JSOW Weapons will be placed in Condition Code "B" when 40 Cats/Traps have been logged

(b) JSOW Flight Hour Limitations as listed:

1. AGM-154A all NALCs 300 Hours.
2. AGM-154B all NALCs 300 Hours.
3. AGM-154C all NALCs 300 Hours.

(c) HARM Missile AGM-88C (NALC PU06/WF22) captive carry a maximum of 250 hours shall be placed in Condition Code J and returned to a Maintenance/Depot Activity.

J9 Retagging Requirements. The MPI team will provide prestamped replacement tags for use on the containers which have been opened. Tags shall be attached to ALM, section, or component containers and secured in a fashion which precludes the tags from being blown off during vertical replenishment. The old tag may be used only if it can be modified legibly and amended as follows:

- a. Enter central data collection agency source data code in Remarks block.
- b. The word "PRE-SENTENCED" to be stamped in the upper portion of the NSN, Stock Number, and Item Description block.
- c. Enter the reason for changes in Remarks block.
- d. Sign or stamp and enter the current date in the inspectors name or stamp and date block.

J10 Container Packing and Palletizing Requirements

a. Bare Stowed Assets. All bare stowed assets are to be repackaged in accordance with applicable NAVAIR-SYSCOM technical manuals. Inspections required during packaging and palletizing operations are the responsibility of the MPI team. Assets which have been repackaged prior to the arrival of the MPI team are assumed to be packaged correctly; however, candidates for upgrade to serviceable condition code requires an in-container inspection by the MPI team.

b. Partially Filled Containers. Partial filling of containers is acceptable as authorized by NAVAIRSYSCOM technical manuals. Partially filled containers shall be stenciled and material condition tags annotated as specified by each technical manual.

J11 Container Inspection Requirements. MPI team members are responsible for completing container inspections as specified in applicable NAVAIRSYSCOM technical manuals.

- a. For serviceable assets, inspection includes:

(1) Verification that the container is properly sealed (i.e., lid is properly mated to the container body and latches are secured).

(2) Verification that the container is structurally sound (e.g., frame is not cracked and no punctures exist in the shell or skin). Assets from any container which has major structural damage must be repackaged prior to offload if there is a potential risk of damage during retrograde. Minor repair or modification of containers is encouraged if the assets are properly protected for return to the Weapons Station or a Maintenance/Depot Activity. Notation shall be made on the material condition tag to indicate repairs required.

(3) Verification that the container is not missing ancillary parts (e.g., stacking posts and pins).

(4) Verification that the container has not been contaminated (i.e., the humidity indicator is not pink).

(5) Verification that containers have all required markings and all erroneous markings are obliterated. Large, black, waterproof felt tip pens can be used to incorporate or modify container markings. The following data should be marked prominently on containers:

- (a) NALC
- (b) Item nomenclature
- (c) MDD (if known or applicable)
- (d) DOLT (Date of Last Test)
- (e) Serial numbers
- (f) Quantity
- (g) Weight and cube container
- (h) Explosive class

(i) Empty containers should be stenciled "EMPTY" IAW OP-3347.

J12 Document Requirements. The formal system for tracking assets is the DoD single line item release document, DD 1348-1. Generation of DD 1348-1 for assets to be offloaded is the responsibility of the Weapons Officer. A separate DD 1348-1 is normally required for each combination of:

- (1) NALC

(2) Condition code

(3) Destination (disposition)

a. Each DD 1348-1 is identified by a 13-digit document number in spaces 31 thru 43 of the strip. For example, document number 03369-9099-5872 means the following:

(1) 03369 User UIC

(2) 9099 Julian Date

(3) 5872 Document Serial Number

b. In an effort to expedite the tracking of a given NALC with a minimum of documents, it is common practice to expand the number of associated DD 1348-1's by placing an alphabetic character in space 44 to signify successive copies. For example, by placing A, B, and C in space 44, a single DD 1348-1 is amended to generate three additional DD 1348-1's.

EXAMPLE

(1) 03369 9099 5872 PD65 COND. CODE A
To a CVN-XX

(2) 03369 9099 5872A PD65 COND. CODE A
To a Weapons Station or a
Maintenance/Depot Activity.

(3) 03369 9099 5872B PD65 COND. CODE E
To a Weapons Station or a
Maintenance/Depot Activity.

(4) 03369 9099 5872C PD65 COND. CODE B
To a Weapons Station or a
Maintenance/Depot Activity.

APPENDIX K

**CONVENTIONAL WEAPONS HANDLING PROCEDURES AFLOAT
LISTING OF RELEVANT PUBLICATIONS**

Number	Publication Title
AW-820YB-MIB0-000	Hellfire Organizational, Intermediate Maintenance Instruction
AW-394YB-MIB-00	Aircraft Guided Missile Launcher M272, Organizational, Intermediate Maintenance
0320-LP-083-0003	Elevator-Cargo (LPH-2)
0916-LP-007-1010	Conveyor, Pallet, Vertical, 3000 Lb Capacity (LPD-4)
0920-LP-107-5010	Hoisting System, Eucus and Hangar (LHA)
0983-LP-000-1000	16,000 Pound Weapons and Cargo Elevator
DSA 700-75-C-8282	Truck Forklift, Electric 4000 Lb Capacity
FM-23-8	U.S., Rifle, 7.62mm, M14/M14E1
FM-23-65	Browning Machine Gun, Caliber .50 HB, M-2 Operation and Maintenance
FM-23-67	Machine Gun, 7.62mm, M-60
MIL-HDBK 236	Index to Standards for Palletizing, Truck Loading, Rail Car Loading, and Container Loading of Hazardous Material
MIL-HDBK 274AS	(As Electrical Grounding for Aircraft Safety)
MIL-STD 1323	Unit Loads of Ammunition and Explosives for Underway Replenishment
NA 01-1A-509	Aircraft Weapon System Cleaning and Corrosion Organizational and Intermediate Maintenance
NA 01-1A-75	Airborne Weapons and Associated Equipment, Consumable Material Applications and Hazardous Material Authorized Use List (Notal)
NA 00-80R-14	Natops US Navy Aircraft Fire Fighting and Rescue Manual
NA 00-80T-106	LHA/LHD/LPH Natops Manual
NA 11-1-19	Ammunition for Navy 20mm/25mm Aircraft Guns Description, Characteristics, Safety, Maintenance and Packaging
NA 11-5A-32	Intermediate Maintenance Weapons Station (WPNSTA) W/IPB, Aircraft General Purpose Bombs, Fire Bombs, Practice Bombs and Components.
NA 11-5A-35	Intermediate Maintenance Weapons Station (WPNSTA) W/IPB, Cluster Bomb Units MK 20 MODS 3,6,7,8,9,10,11,12 CBU-99 Series and CBU-100 Series Inert and Explosive Loaded.
NA 01-700	Airborne Weapons/Stores (Conventional/Nuclear) CheckList/Src/Manual Publication Index
NA 01-AIM9-2	AIM-9H/L/M Guided Missile Sidewinder and Training Missiles
NA 01-AIM-9-2.1	AIM-9L Guided Missile Sidewinder and Training, Intermediate Maintenance W/IPB
NA 01-AGM-88A-2	HARM Fleet Intermediate Maintenance W/IPB
NA 01-AGM-122A-2	AIM-122A Guided Missile Sidearm and Training Missiles

Listing of Relevant Publications, Ordnance Handling Procedures Aboard Amphibious Ships.

Number	Publication Title
NA 01-AGM-122A-2.1	AGM-122A Guided, Atm-122a Air Training And Catm-122a Captive Training Missiles, Organizational and Intermediate Maintenance Instructions
NA 11-1F-2	Airborne Bomb and Rocket Fuse Manual, Description and Characteristics
NA 11-5A-17	Aircraft General Purpose Bombs, Fire Bombs, Practice Bombs, Fuzes, and Associated Components
NA 11-5E-19	Rack, Aircraft Store Ejector, Talley Organizational, Intermediate, Maintenance
NA 11-70KAA-1	Shipping and Stowage Containers for Walleye Guided Weapon System, all MKs and MODs, Naval Weapons Station Intermediate Maintenance W/IPB
NA 11-1C-1	Containers, Airborne Weapons Maintenance Instructions, W/IPB
NA 11-15-4	Decoy Flare, MK 46 MOD 0, MK 6 MODs 0, 1, 1A, 1C, MK 47 MOD 0, MK 50 MOD 0 Operational Instructions
NA 11-45BB-9	20mm Fire Suppressive System Intermediate Maintenance Instructions
NA 11-70DA-1	UH-1N Defensive Armament Subsystem A/A49E-11 Organizational and Intermediate Maintenance Instructions
NA 11-75A-57-3	CBU-MK 20, MER/TER Preloaded Checklist
NA 11-75A-59	Missile Launcher Adapter ADU-299 Intermediate Maintenance Instructions
NA 11-75A-73	Aircraft Bomb Rack, BRU-20, BRU-22, BRU-23 Organizational and Intermediate maintenance Instructions
NA 11-75A-90	TOW Missile Launcher Organizational and Intermediate maintenance Instructions
NA 11-75A-92	Aircraft Rocket Systems 2.75 AND 5.0 Inch Description, Safety, Service and Handling Instructions Intermediate Maintenance
NA 11-75AA-42	Decoy Flare Operation, Handling, Safety, and Storage Instructions
NA 11-75AA-44	Dispenser, Parachute Flare, Various
NA 11-75AA-48	Dispenser SUU-25F/A Parachute Flare
NA 11-75BGM71-1	TOW Guided Missile Organizational and Intermediate Maintenance Instructions
NA 11-95-13	Organizational And Intermediate Maintenance Manual W/IPB Aircraft Machine Gun, Caliber .50 XM-218
NA 11-95GAU-1	GAU-17/A Machine Gun Organizational maintenance Instructions
NA 11-95GAU-2B-1	Machine Gun, GAU-2B/A, 7.62mm Aircraft, Intermediate Maintenance Manual W/IPB
NA 11-95MAU-1	MAU-201 Feeder Delinker Organizational Maintenance Instructions
NA 11-95MAU56-1	Feeder Aircraft, Machine Gun Delinker, Maintenance Manual W/IPB
NA 11-95M60-1	Gun 7.62mm Aircraft Machine Gun, M60 MODS C/D, Organizational and Intermediate Maintenance W/IPB
NA 11-95M89-1	M89 Declutching Feeder Maintenance Instructions

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Number	Publication Title
NA 11-95M197-1	M197 20mm Automatic Gun Maintenance Instructions
NA 11-95M240D1-1	M240D Machine Gun Organizational Maintenance Instructions
NA 11-100-1.1	Cartridge and Cartridge Actuated Devices (CADs) for Aircraft and Associated Equipment General Use
NA 11-100-1.2	Cartridge And Cartridge Actuated Devices (CADs) for Unique Aircraft Systems
NA 11-100-1.3	Cartridge And Cartridge Actuated Devices (CADs) for Bomb Racks/Launchers, Bomb Dummy Units, and Airborne Missile Systems
NA 11-120-7	Bomb Cluster Anti-Tank MK 20 MODs 2, 3, 4, and 6 ROCKEYE II Ship Weapon Installation Manual
NA 11-120-8	Bomb Assembly Platform Stand Installation and Operation Instructions, Ship Weapon Installation Manual
NA 11-120-15	Ship Weapon Installation Manual, Rocket, 5.0 INCH Forward Fired ZUNI
NA 11-120-23	Guided Missile Sidewinder AIM-9 Series
NA 11-120-25	Bombs, Low Drag MK 82 Retard/Nonretard MK 83 MK 84 (Naval Engineering Center) Ship Weapons Installation Manual
NA 11-120-35	Ship Weapon Installation Manual, Gun System M61A1 20mm
NA 11-120-42	Ship Weapon Installation Manual Anti-personnel/Anti-material Cluster Weapon CBU-59 APAM
NA 11-120-58	Ship Weapon Installation Manual, Laser Guided Missile AGM-65E and Infrared Guided Missile AGM-65F (MAVERICK)
NA 11-120-59	Ship Weapon Installation Manual Aircraft Parachute Flare LUU-2B/B and Flare Dispenser SUU-25F/A
NA 11-120-60	Ship Weapon Installation Manual, 2.75-inch Folding Fin Aircraft Rocket
NA 11-120-62	Ship Weapon Installation Manual for HELLFIRE
NA 11-120-66	Ship Weapon Installation Manual AV-8B, Aircraft 25mm Gun System
NA 11-120A-1.2	Airborne Weapons Packaging and Handling
NA 11-140-5	Airborne Weapons Assembly Manual, Bombs, Firebombs and Practice Bombs.
NA 11-140-6-1	Air Intercept Weapons Assembly Manual
NA 11-140-6-2	Air Ground Weapons Assembly Manual
NA 11-140-9	Airborne Weapons Assembly Manual, CBUs.
NA 11-140-10	Airborne Weapons Assembly Manual, LGBs/GBUs.
NA 11-140-24	Airborne Weapons Support Equipment
NA 11-140-25	Airborne Weapons Support Equipment Configuration
NA 15-02-500	Preservation Of Engines, Organizational, Intermediate, and Depot
NA 16-1-500	Dry Battery, Supply Data Bulletin

Listing of Relevant Publications, Ordnance Handling Procedures Aboard Amphibious Ships.

Number	Publication Title
NA 16-30 ALE 29-3	Dispensing Set Countermeasures Chaff, Maintenance Instructions W/IPB
NA 16-30 ALE 37-1	Dispensing Set, Countermeasures Chaff, An/Ale-37a Intermediate Maintenance Instructions W/IPB
NA 16-30 ALE 39-1	Countermeasure Dispensing System, AN/ALE-39, and Countermeasure Dispenser Control C-10536/ALE-39 Intermediate Maintenance W/IPB
NA 17-1-108	Torque Tools, Use, Care and Testing Instructions
NA 17-1-125	Ground Support Equipment (GSE) Cleaning And Corrosion Control, Maintenance Instruction, Organizational and Intermediate
NA 17-1-127	Weapon Support Equipment, Periodic Proofread Testing of, Intermediate Maintenance W/IPB
NA 17-35FR-01	Calibration Facility Requirements for Navy Field Calibration Activities
NA 19-15-27	Platform Stand, Small Bomb Assembly, Operational and Intermediate Maintenance Instructions W/IPB
NA 19-15BC-12	Bomb Skid Assembly, AERO 12C, Organizational and Intermediate Maintenance Instructions W/IPB
NA 19- 15BC-13	Weapon Skid AERO 21A (Deval) Operational Service and Overhaul Instructions W/IPB
NA 19-15BD-2	Adapter, Small Bomb And Missile (SPMA), AERO 67/A Operational, Service, and Overhaul Instructions W/IPB
NA 19-15BD-3	Adapter Bracket, AERO 91A for AERO 21A Weapons Skid, Installation Instructions
NA 19-25D-20	Air Nitrogen Purifier, MK 1 MOD 0 and MK 2 MOD 0, Operational, Service and Overhaul Instructions W/IPB
NA 19-25E-45	Trailer, Air Launched Weapon, Transporting/Loading A/M 32K-3 #Standard MFG VO. #, Operating, Servicing, and Overhaul Instructions W/IPB
NA 19-100-3	Adapters Support Equipment, General, Operating and Intermediate Maintenance Instructions W/IPB
NA 19-600-75-6.1	Weapon Skid, AERO 21, Preoperational Maintenance Requirements
NA 19-600-75-6.4	Weapon Skid, AERO 21A, Calender Maintenance Requirement Cards
NA 19-600-96-6.1	Bomb Skid, AERO 12B/C, Preoperational Checklist
NAVSEA SC420-B1-WHS-010	Weapons, Air Launched, Handling and Stowage
NAVSEA SG420-B1-WHS-020	Air Launched Weapons Handling and Stowage
NAVSEA SG420-B5-WHS-101	Handling And Stowage of Air Launched Weapons Aboard Amphibious Ships
NAVSEA SW030-AA-MMO-010	Navy Gun Ammunition
NAVSEA SG420-AP-MMA-010	Periodic Testing Arrangements for Ordnance Handling Equipment
NAVSUP P-801	Ammunition Unserviceable, Suspended and Limited Use

Listing of Relevant Publications, Ordnance Handling Procedures Aboard Amphibious Ships.

Number	Publication Title
NAVSUP P-802	Navy Ammunition Logistics Codes
OD 10773	Electroexplosive Devices, Safety Principles for Operations Involving
OD 30000	Ordnance Equipment Lubrication
OD 0	Index of Ordnance Data
OP 4	Ammunition Afloat
OP 1014	Ordnance Safety Precautions, Origin And Necessity
OP 2173 Volume 1	Approved Handling Equipment for Weapons and Explosives; Adapters Through Jigs
OP 2173 Volume 2	Approved Handling Equipment for Weapons and Explosives; Latches Through Trucks
OP 2238	Identification of Ammunition
SW020-AF-ABK-010	Motor Vehicle Driver's Ammunition, Explosives, and Hazardous Materials
OP 2899	Missile Transportation and Stowage Guide
OP 3243	General and Operational Safety
OP 3347	U.S.N. Ordnance Safety Precautions
OP 3565/NA 16-1-529 VOL 1	Electromagnetic Radiation Hazards (Hazard to Personnel, Fuel, And Other Flammable Material)
OP 3565/NA 16-1-529 VOL 2	Electromagnetic Radiation Hazards (Hazard to Ordnance)
OP 3611	Safety Handbook for Material Handling Operators
OP 4016 Volume 1	Hand Lift Truck MK 15 MOD 0/1; D.O.M. w/IPB
OP 4098	Handling Ammunition, Explosives, and Hazardous Material with Industrial Materials Handling Equipment (MHE)
OP 4016	Truck, Handlift, MK 45 MOD 0, 1, Description of Operation and Maintenance W/IPB
OP 4154	Close In Weapon System, MK 15 MOD 1 THRU 4 and 6 (PHALANX) Introduction to CIWS
OP 4335	Small Arms and Special Warfare Ammunition, Description and Maintenance
OP 4550	Handling And Stowage of Amphibious Assault Ammunition Aboard Amphibious Ships

Listing of Relevant Publications, Ordnance Handling Procedures Aboard Amphibious Ships.

Number	Publication Title
S9LHA-AA-WHM-010	Handling And Stowage Procedures For Ground- and Air-delivered Nuclear Weapons Aboard LHA-1 Class Ships
S9571-AA-MMA-010	Underway Replenishment Ordnance Equipment and Transfer Units
S9086-XG-STM-000	Naval Ships' Technical Manual Chapter 700 Shipboard Ammunition Handling and Stowage
SG818-AM-MMO-010	Cargo/Weapons Handling Elevator for LHA-1 Class Ships; Description, Operation and Maintenance
SG420-AP-MMA-010	Periodic Test Arrangements for Ordnance Handling Equipment
SW010-AB-GTP-010	United States Navy Ammunition Historical and Functional Data
SW020-AC-SAF-010	Transportation and Storage Data For Ammunition and Related Hazardous Materials
SW020-AG-SAF-010	Navy Transportation Safety Handbook for Hazardous Material
SW050-AB-MMA-010	Pyrotechnic, Screening, Marking, and Countermeasures Devices
SW050-AC-ORD-010	Toxic Hazards Associated with Pyrotechnic Items
S9000-AB-GTP-010	Shipboard Safety and Damage Control Facilities For Stowage of Hypergolic Fueled Missiles And Fuel-Air-Explosive (FAE) Bombs
SW 300-BC-SAF-010	Clearing of Live Ammunition from Guns
SW060-AA-MMA-010	Demolition Materials (Tech Manual)
SW073-AC-MMA-010	Misc. Chemical Munition, D & O
NAVSUP P-807	Naval And Marine Corps Conventional Ammunition Sentencing
TBD	JSOW Ships Weapons Installation Manual

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